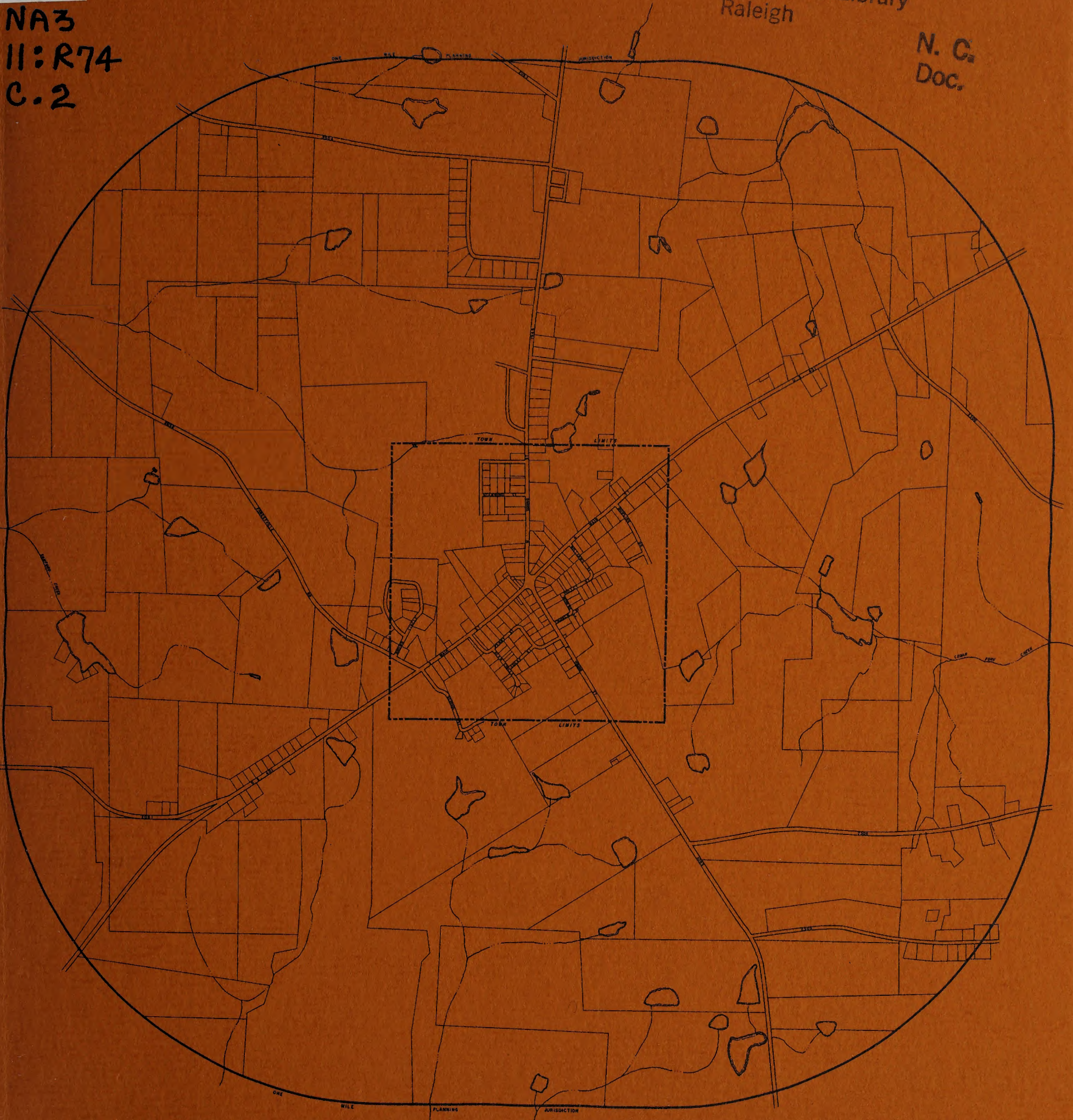


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LAND USE SURVEY & ANALYSIS & LAND DEVELOPMENT PLAN ROLESVILLE, NORTH CAROLINA

ABSTRACT

TITLE.....LAND USE SURVEY AND ANALYSIS
AND LAND DEVELOPMENT PLAN

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Economic Resources
Division of Community Assistance
Raleigh, N.C. 27611

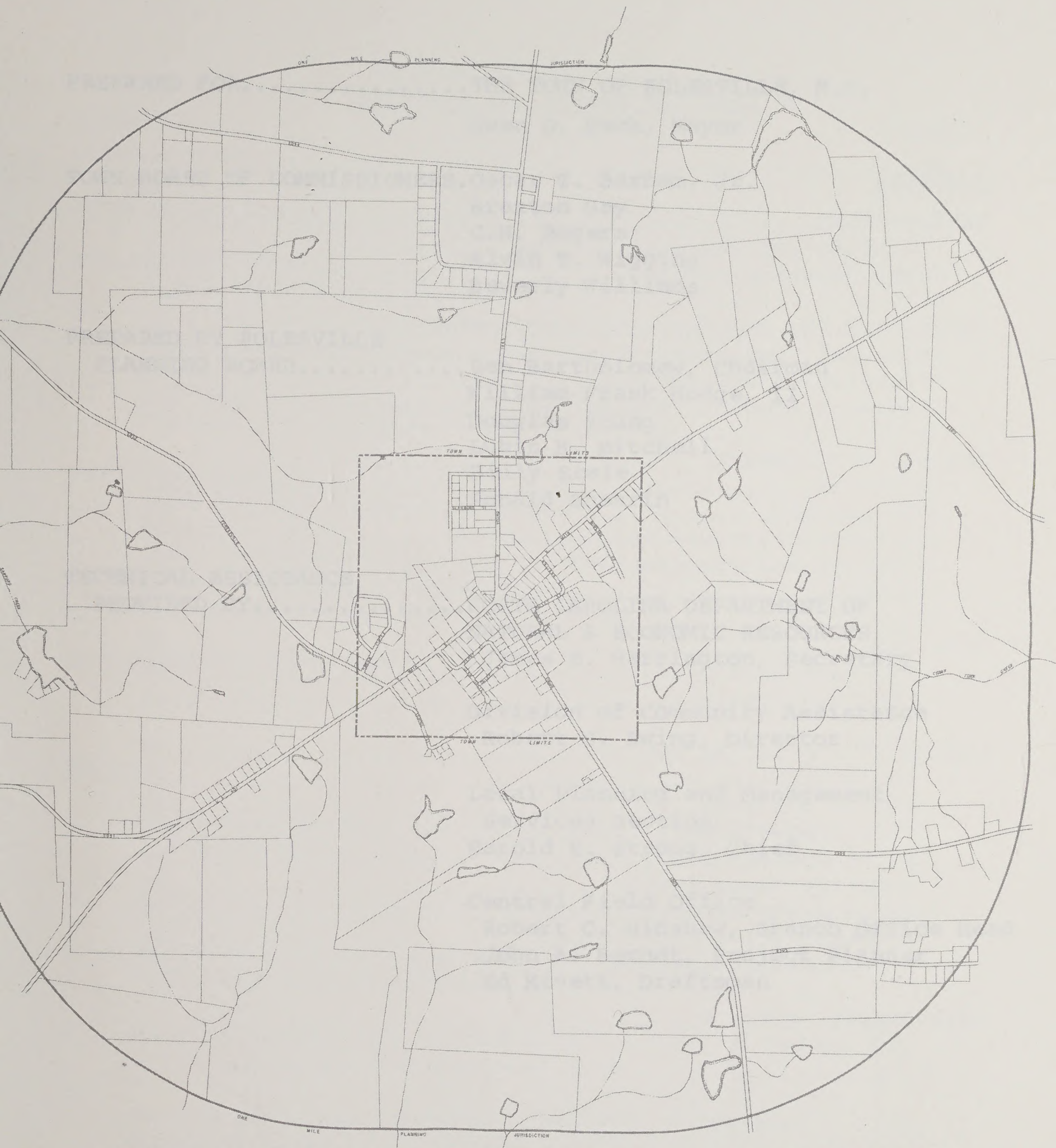
DATE.....July 1974

LOCAL PLANNING AGENCY...Rolesville Planning Board

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Division of Community Assistance
P.O. Box 27687
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ABSTRACT.....The land use survey and analysis considers
population and economic characteristics,
natural environment, land use, and com-
munity facilities and services as determi-
nants of land development potential in
Rolesville. The land development plan
recommends community goals and how to
achieve them through sound arrangements of
land uses and community facilities.



LAND USE SURVEY & ANALYSIS & LAND DEVELOPMENT PLAN ROLESVILLE, NORTH CAROLINA

PREPARED FOR.....THE TOWN OF ROLESVILLE, N.C.

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TOWN BOARD OF COMMISSIONERS.Oscar T. Barham, Jr.

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JULY 1974

LAND USE SURVEY AND ANALYSIS

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LAND USE SURVEY AND ANALYSIS

INTRODUCTION

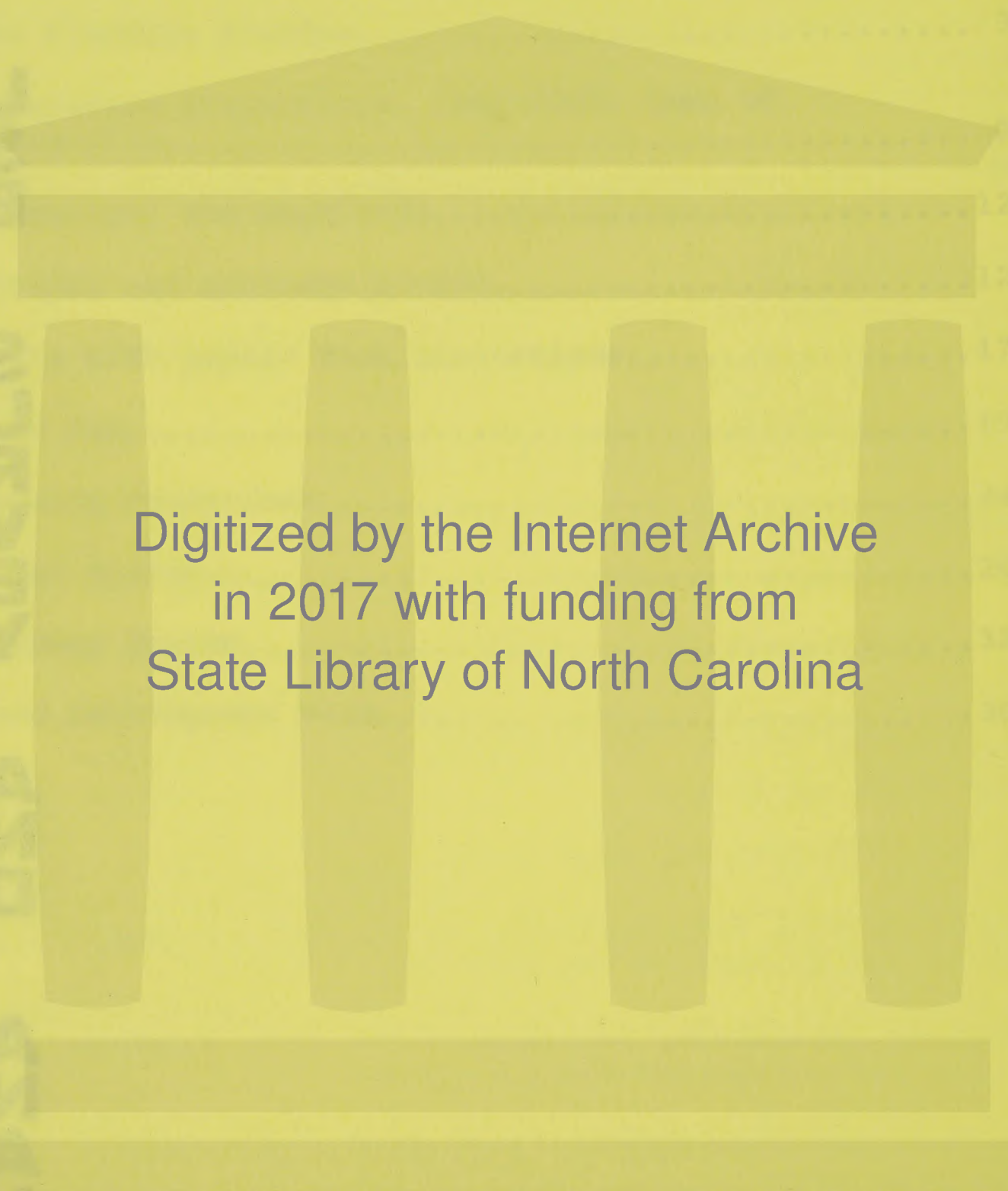
History and Regional Setting

The town of Hillsville is located in western North Carolina, approximately twelve miles northwest of the state capital, Raleigh. Hillsville was founded in 1882 and has since that time been a small, rural community. The town is situated in a valley, and its growth has been limited by its location. The town is surrounded by agricultural land, and its economy is primarily based on farming. The town is also known for its scenic views of the surrounding mountains.

Located on U.S. Highway 101, Hillsville is approximately midway between Asheville and Lenoir, the county seat of Lenoir County. Hillsville is a small town with a population of approximately 1,000 people. The town is surrounded by agricultural land, and its economy is primarily based on farming. The town is also known for its scenic views of the surrounding mountains.

Hillsville is one of the most scenic towns in North Carolina, and it is a popular destination for tourists. The town is surrounded by mountains, and its location provides a beautiful view of the surrounding landscape. The town is also known for its historic architecture, and it has a rich cultural heritage. The town is a small, rural community, and its growth has been limited by its location. The town is surrounded by agricultural land, and its economy is primarily based on farming. The town is also known for its scenic views of the surrounding mountains.

Two proposed developments are planned for the town of Hillsville. The first is a new hotel, which is to be built on a site near the town of Hillsville. The second is a new shopping center, which is to be built on a site near the town of Hillsville. The town is a small, rural community, and its growth has been limited by its location. The town is surrounded by agricultural land, and its economy is primarily based on farming. The town is also known for its scenic views of the surrounding mountains.



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INTRODUCTION

History and Regional Setting

The Town of Rolesville is located in eastern Wake County, approximately twelve miles northeast of Raleigh, the state capital. Rolesville has a history of a quiet farm community, going back to the state coach days when it was a stop on the stage road. The town was quite active in the early 1800's, and facilities included a large slave market in the town square. Incorporated in 1837, Rolesville was named for William Roles, one of the first settlers in the area.

Located on U.S. Highway 401, Rolesville is approximately midway between Raleigh and Louisburg, the county seat of Franklin County. Wake Forest, approximately five miles northwest of Rolesville, is the closest incorporated town.

Rolesville is one of ten incorporated municipalities in Wake County, and is within the sphere of influence of that area commonly referred to as the Research Triangle area. Wake County is part of the Region "J" Council of Governments, one of the 17 multi-county regions established by Governor Bob Scott, in 1970. Other counties within Region "J" include Durham, Orange, Lee, Chatham, and Johnston. Rolesville is the only municipality within the region which has chosen not to join the Council of Governments. The location of Rolesville within the region is shown on Figure 1.

Two proposed developments of regional significance could have a good deal of effect on the Town of Rolesville in the future. First is the Gulf Atomic plant, programmed to be constructed on a site near the Town of Youngsville, about 8 miles from Rolesville. The Gulf Atomic plant, which is to employ

more than 2,200 persons, is expected to have significant effects on the Town of Wake Forest, and "spillover" from Wake Forest development could reach Rolesville. The second major development is the Falls of the Neuse dam which, if constructed as originally proposed, will create a multi-purpose reservoir spreading to within four miles of Rolesville. These major projects, which will be discussed further in this report, must be considered as major influences on Rolesville's future growth and development.

The Planning Process

Being faced with major regional developments such as those outlined above, plus some land use problems that required immediate attention, prompted the Rolesville Town Board of Commissioners in early 1973 to pursue a comprehensive planning program to help guide future growth and development. This led to the creation of a Rolesville Planning Board, which was charged with responsibility for developing a land use plan for Rolesville and its planning area, along with appropriate measures for implementing the plan.

Before embarking on writing any specific plan or ordinance, it is important to understand the nature of the planning process itself.

Every individual or group plans their future to some extent, some more formally and in more detail than others. Individuals plan their budgets, their insurance program, their educational goals, and their daily activities. Families plan their vacations and how many rooms to build in their new house. Businesses plan how much new capital to invest.

Governmental units must plan, too. Planning is necessary to determine the wisest use of the community's resources to reach established goals and objectives. Cities, counties, and other units of government have always planned their futures to some extent, but a comprehensive approach taking into consideration the community's economic base, population characteristics, and public facilities, as well as the cultural context, social needs and political and financial realities, is a much newer phenomenon.

The way in which this is accomplished is called the planning process. This process generally consists of the following steps: 1) a survey of trends and existing conditions in respect to population, economy, transportation, and other elements pertinent to the community, 2) an analysis of the facts obtained in the survey, including identification of problem situations, potentials, and relationships, 3) a synthesis of what end state is desired, which includes the formulation of goals and policies, 4) a plan which is a graphic presentation of proposed development designed to achieve stated goals and policies, and 5) implementation of plan proposals. This process is shown graphically in Figure 2 on the following page.

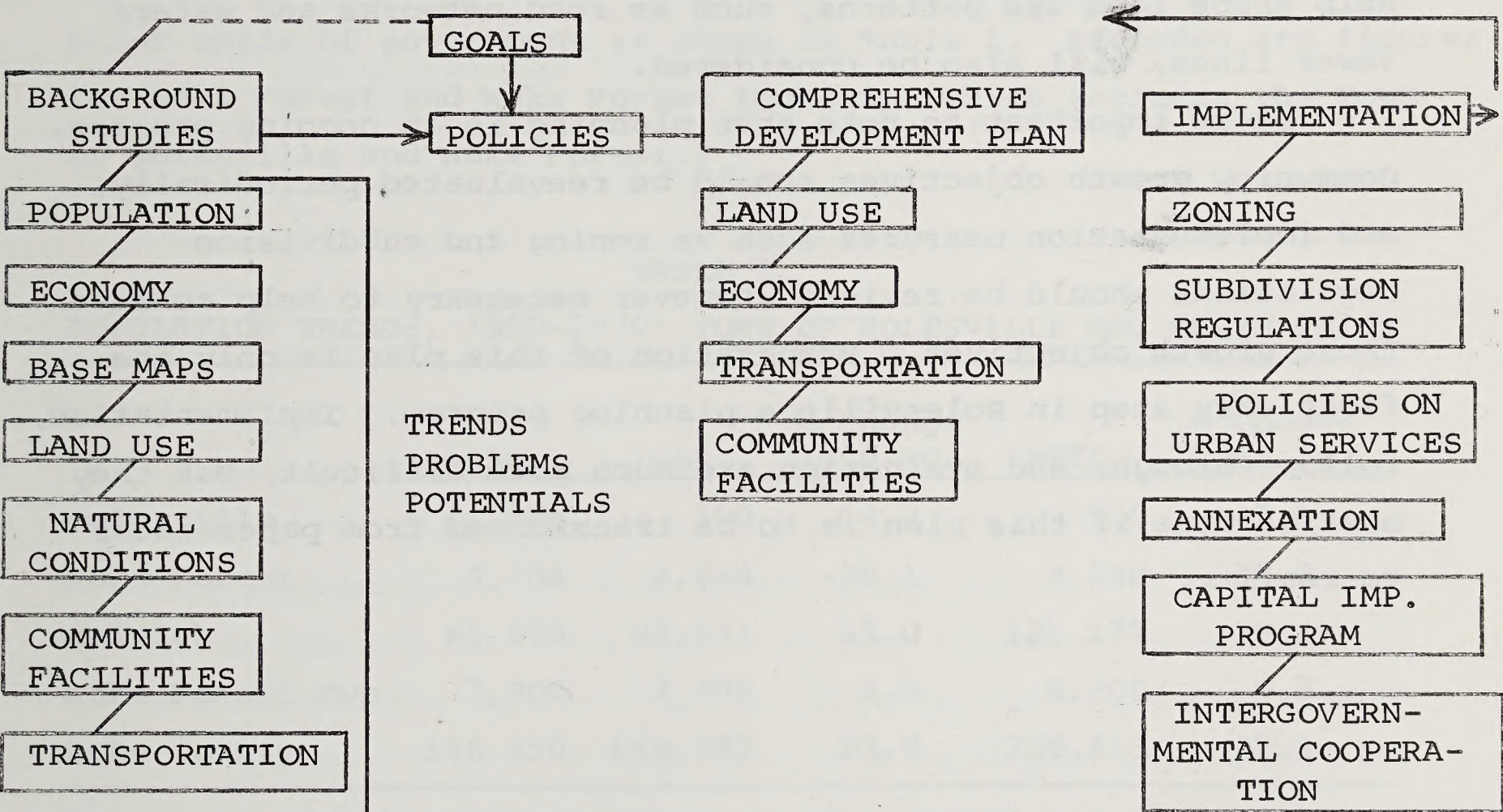
FIGURE 2

THE PLANNING PROCESS

WHERE WE ARE

WHAT WE WOULD LIKE TO BE

HOW WE GET THERE



The Land Development Plan for Rolesville will focus on physical development and uses of the land; i.e., where future growth should be encouraged to make the best use and economical expansion of community facilities possible. Major factors which help shape land use patterns, such as road networks and water/sewer lines, will also be considered.

It is important to note that planning is an ongoing process. Community growth objectives should be reevaluated periodically, and implementation measures such as zoning and subdivision regulations should be revised whenever necessary to help achieve those growth objectives. Preparation of this plan is only the first easy step in Rolesville's planning program. Implementation, follow through, and evaluation are much more difficult, but they must be done if this plan is to be transformed from paper ideas to reality.

POPULATION AND ECONOMIC CHARACTERISTICS

General Population Trends and Characteristics

The population of Rolesville has been steadily increasing over the past two decades. According to U.S. Census figures, the town increased from a population of 288 in 1950 to 358 in 1960 (an increase of 24.3 percent), and to 529 in 1970 (an increase of 47.8 percent). If these figures are correct, the rate of growth in Rolesville during the last decade exceeded that of Raleigh and Wake County. A comparison of growth rates for Rolesville and other units of government is shown in Table 1. Included are figures for Wake Forest and Wake Forest Township (which includes the Town of Rolesville and Wake Forest.)

TABLE 1

POPULATION TRENDS, 1950-1970: TOWN OF ROLESVILLE AND OTHER UNITS

	1950	1960	% Change 1950-60	1970	% Change 1960-70
Rolesville	288	358	24.3	529	47.8
Wake Forest	3,704	2,664	-28.1	3,148	18.2
Raleigh	65,679	93,931	43.0	121,577	29.4
Wake Forest Twp.	7,900	7,585	- 4.0	8,309	9.5
Wake County	136,450	169,082	23.9	228,453	35.1

SOURCE: U.S. Census of Population, 1950, 1960, and 1970.

It should be noted, though, that these census figures are not necessarily correct; for a smaller town such as Rolesville the chances of a larger percentage error are greater than for a metropolitan area. There does seem to be quite a large discrepancy between 1970 census data for Rolesville and information obtained from a land use survey conducted in September 1973. According to 1970 census figures, there were 173 dwelling units in the town when the survey was taken (including 149 single unit structures, 15 structures with two or more units, and 9 mobile homes). However, according to the land use survey there are 128 residential units in Rolesville, including five mobile homes. Some of the discrepancy is probably due to inaccurate town boundaries which have been resurveyed since 1970, thereby deleting some dwellings from the town which previously were included. This could not account for a discrepancy of 45 units, however, so there may have been an additional census-taking error. Based on the land use survey, an estimated vacancy rate of 4 percent, and an average of 3.2 persons per household, the current population of Rolesville is likely to be closer to 400 persons than the 529 reported in the census. Population of the one mile planning area outside of Rolesville, based on 149 occupied dwellings and an average household size of 3.2, is estimated to be 480 for a total planning area population of 880 persons.

Characteristics of the population can be readily ascertained only from census information. While the total census count for Rolesville in 1970 was probably high, the characteristics of those counted are probably not too far off.

The sex ratio in Rolesville is weighted on the side of females, as is the case in most other parts of North Carolina and the country. There were 92.4 males per 100 females reported in Rolesville in 1970, compared to 95.9 percent statewide.

Concerning the age breakdown, a generalized statement can be made that the population in Rolesville is somewhat older than that in the region or statewide, giving it somewhat of a "retirement village" atmosphere. A little over 37.8 percent of the people in Rolesville are under 21 years of age. Comparable figures for the state and the Triangle "J" region are 40.9%, and 40.0% respectively. The proportion of elderly (65 years and older) in Rolesville is 9.3 percent, whereas the North Carolina figure is 8.1 percent and for the region it is 7.2 percent. These figures are significant since a younger population structure usually indicates a dynamic growth factor and immigration of younger families. On the other hand, an older population like that in Rolesville indicates slower growth and outmigration of younger people.

Racial characteristics are close to those for the state and region. In 1970, 24.9 percent of Rolesville's population was black, compared to 22.4 percent statewide and 24.6 percent in Region "J".

Household size averages 3.2 persons per household (the same as the state average), which is only slightly higher than the regional figure of 3.1 persons per household. There is a large variation, however, between total average household size and household size for black families. The black average household size in 1970 was 4.4, which is considerably higher than the state and regional figures of 3.9 and 3.7, respectively.

Population Projections

Population projections for a town the size of Rolesville are subject to a good deal of error simply because there is such a small base to begin with, and one unforeseen event such as a major industrial plant locating in or near there could result in

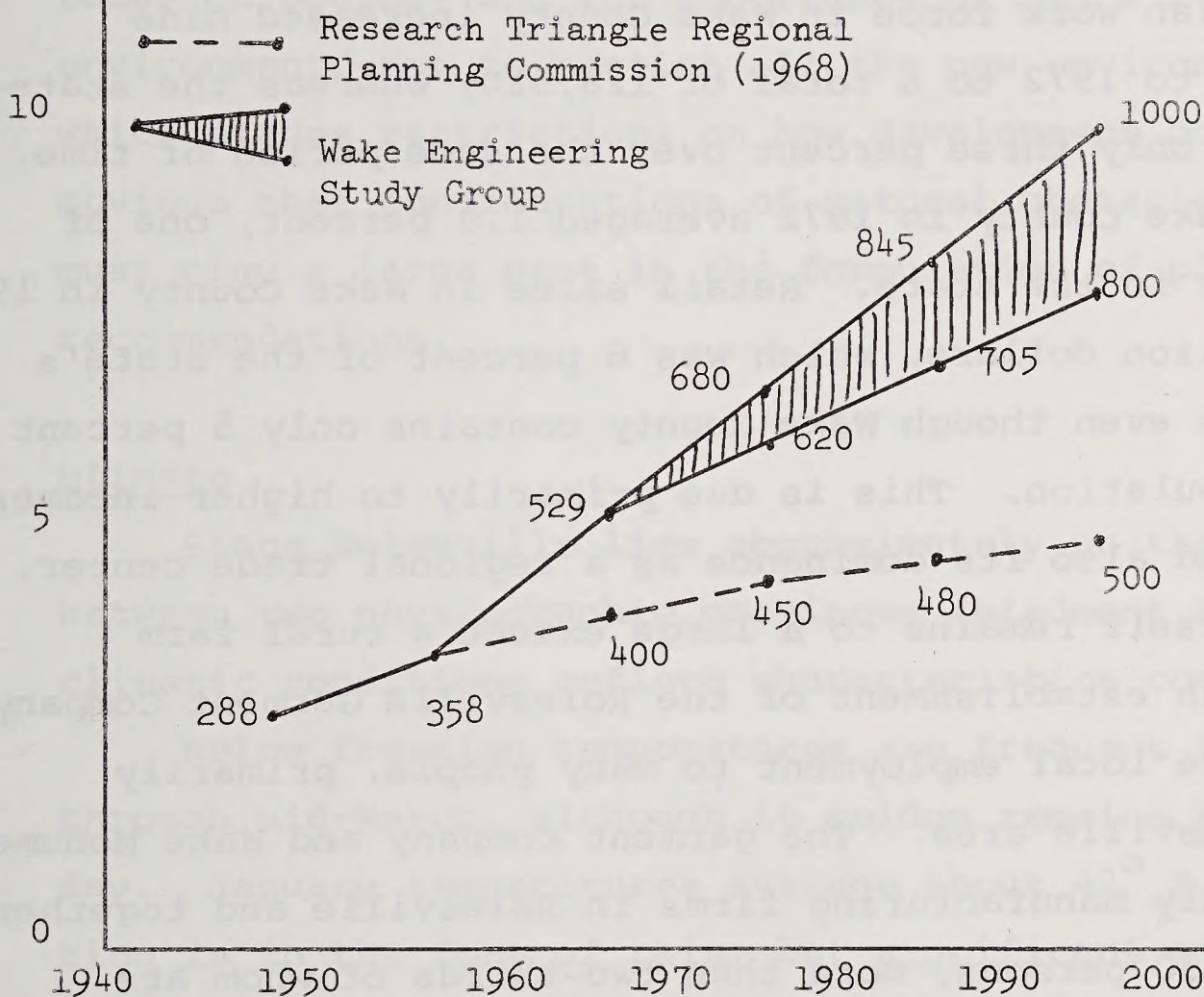
a large percentage error in the projections. This is particularly true in the case of Rolesville since it is unknown just what impact the Falls of Neuse Dam (if it is ever built) and the Gulf Atomic plant near Youngsville will have on the town.

The Gulf Atomic plant, to be located on Highway 96 just north of Youngsville, could have the greatest single impact on the growth of Rolesville and the surrounding area. Construction of the plant is to begin in 1976, and will ultimately employ over 2,200 workers. Since the plant site is only approximately 8 miles from Rolesville, it is likely that some families desiring a small town atmosphere will locate in the Rolesville area. Of course, the impact of the Gulf Atomic plant on Rolesville's growth will depend very much on the town's ability to provide needed services, such as water and sewer, for urban expansion.

Policies concerning annexation will also affect to a great extent the rate of growth in Rolesville itself, particularly since many of the existing undeveloped areas in town cannot be developed with septic tanks due to natural site limitations. Again, what this all means is that population projections for Rolesville are very speculative and should be taken with a grain of salt.

Figure 3 below shows population projections for Rolesville calculated by the Wake Engineering Study Group and the Research Triangle Regional Planning Commission. The Research Triangle Regional Planning Commission projections obviously are too low, however, the general trend (including a total population of 500 for the year 2000) might not be far off if two assumptions were used, i.e., that there would be no annexation to Rolesville, and that sanitary sewer facilities would not be available to the town. The Wake Engineering Study Group projections are more realistic if sanitary sewer facilities become available to Rolesville as planned. The higher projections would indicate a more aggressive annexation policy by the town. Projections for the planning area could be expected to be about double of those for the town itself.

Figure 3
POPULATION PROJECTIONS, 1980-2000: TOWN OF ROLESVILLE



SOURCE: Wake Engineering Study Group, Wake County Water and Wastewater Engineering Study.

General Economic Trends and Characteristics

Small area economic data for Rolesville are not readily available, however, a look at the regional picture, including Wake County, is helpful since so many Rolesville residents commute to work.

Wake County, as part of the Research Triangle area, is one of the fastest growing economic as well as population centers in the state. The civilian work force in Wake County increased nine percent from 1971 to 1972 to a total of 128,520, whereas the state-wide increase was only three percent over the same period of time. Unemployment in Wake County in 1972 averaged 1.9 percent, one of the lowest figures in the state. Retail sales in Wake County in 1972 totaled 571.7 million dollars, which was 6 percent of the state's total retail sales even though Wake County contains only 5 percent of the state's population. This is due primarily to higher incomes in Wake County, and also its dominance as a regional trade center.

Rolesville itself remains to a large extent a rural farm community, although establishment of the Rolesville Garment Company in 1965 did provide local employment to many people, primarily women, in the Rolesville area. The garment company and Wake Monument Company are the only manufacturing firms in Rolesville and together employ less than 150 persons, more than two-thirds of whom are women. One small monument company, largely family operated, is also located in town.

Although exact figures are not available, it is obvious that most people living in Rolesville work elsewhere, primarily in Raleigh. This trend is likely to continue, thereby reenforcing the town's status as a "bedroom community."

NATURAL ENVIRONMENT

The natural features in an area such as Rolesville can and do have a great deal of influence on how the town can develop in the future. Characteristics such as soils and groundwater are particularly important to a town which depends on septic tanks and wells, such as is the case in Rolesville. With increasing emphasis today on ecology and the importance of man's relationship with the environment, not to mention all the new environmental legislation, which places restrictions on how development occurs, it is obvious that considerations of natural obstacles to development must play a large part in the formulation of plan proposals and recommendations.

Climate

Since Rolesville lies approximately on the dividing line between two physiographic provinces (piedmont and coastal plain), climatic conditions reflect characteristics common to both.

Below freezing temperatures are frequent from mid-November through mid-March, although it seldom remains below freezing all day. January temperatures average about 42° F. Most precipitation is in the form of rain, but significant amounts of snow fall a few times each winter. Average annual precipitation is about 46 inches, with higher amounts during the months of July and August (5.8 and 5.4 inches respectively), and lowest amounts during October (averaging 2.6 inches). Average length of freeze-free growing season is approximately 200 days. Prevailing winds are from the southwest most of the year; however, in September and October this changes to northeast.

Topography

Rolesville straddles a ridge which generally follows the axis of U.S. Highway 401. Elevations range from 442 feet near the center of town, to 360 feet in the northwest corner. The land slopes to stream valleys to the north, south, east and west, with the most steeply cut stream valleys to the south (Harris Creek) and west (Sanford Creek). Figure 4 shows contours and wooded areas for Rolesville and the planning area.

Surface Water and Drainage

Surface water resources in the Rolesville planning area include four streams (and their tributaries), and forty-five farm ponds. The planning area includes four drainage basins (see Figure 5), although there are only three basins within existing town limits.

Streams in the Rolesville planning area include Sanford, Mills, Harris (Peoples or Powell Creek on some maps), Cedar Fork, and Perry.

Sanford and Mills Creek are both classified "D" by the State Board of Water and Air Resources. This designation is the lowest in terms of water quality*, which means it can be used for agricultural and industrial purposes. Mills Creek flows directly to the Neuse River, intersecting it midway between U.S. Highway 1 and U.S. Highway 401. Sanford Creek flows to the Neuse River via Smith Creek, about one-half mile above Tom Creek.

*Water quality ratings from highest to lowest are A-II, B, C, and D.

Harris Creek, Classified B by the State Board of Water and Air Resources, flows into Hodge Mill Creek and then into the Neuse River about 1½ miles downstream from U.S. Highway 401.

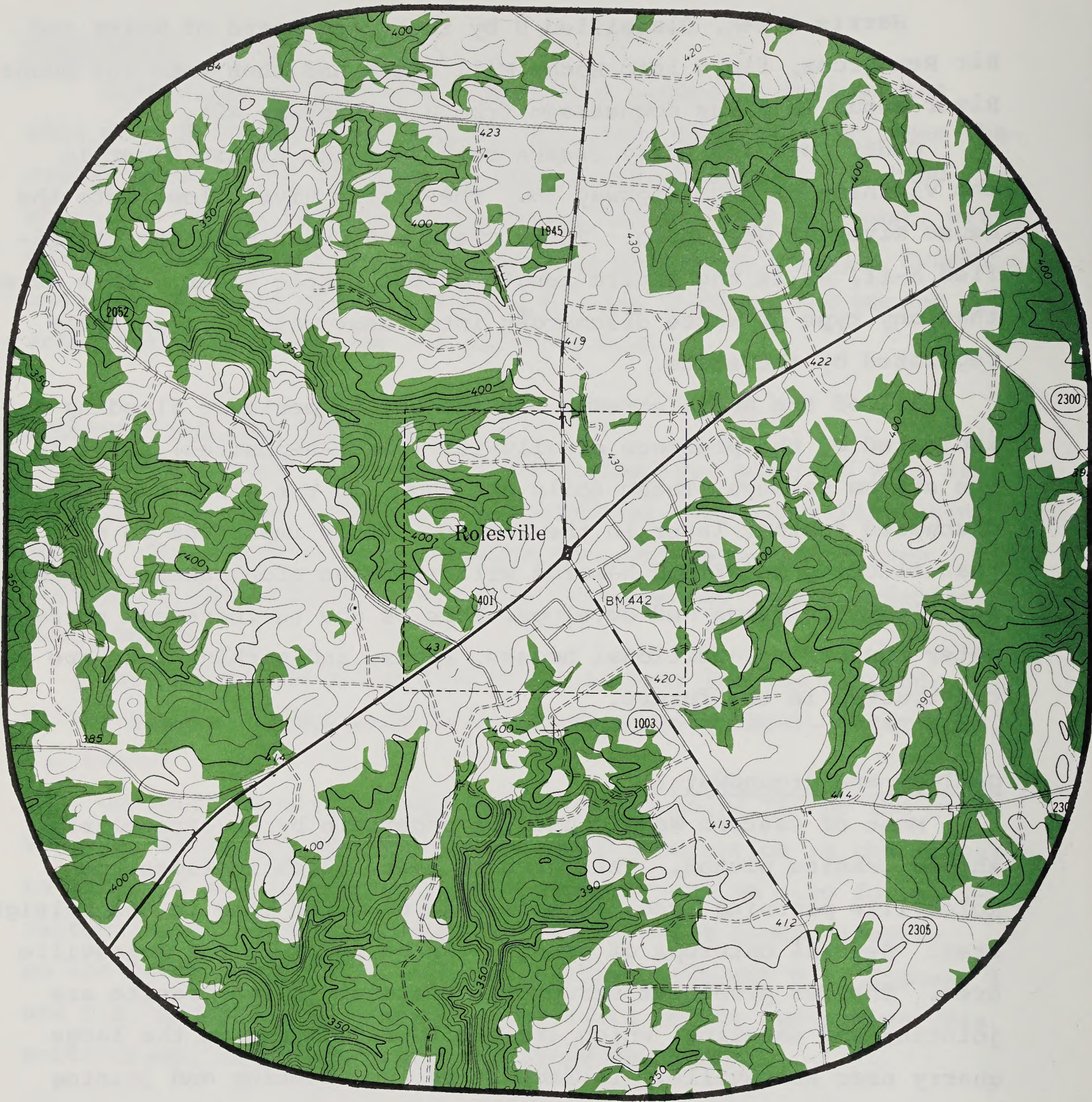
Cedar Fork and Perry Creeks both join the Little River in the vicinity of N.C. Highway 96. The Little River flows into the Neuse River at Goldsboro. Perry Creek and Cedar Fork are classified A-II, as is the entire length of the Little River. This means that any type of waste discharges into these waters is strictly regulated by the state.

All of the above streams are subject to periodic flooding as indicated by the presence of alluvial (water-deposited) soils in the stream valleys. These soils are shown on the soils map and are discussed further later in the report. It is important to note that flooding and flood hazards will increase along these streams as Rolesville grows and develops. This is due to increased surface water run-off as additional houses, roads, and parking lots are constructed in the future.

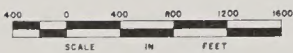
Geology and Groundwater

Most of eastern Wake County is underlain by an irregularly shaped granite pluton. This granite belt, which includes the Rolesville planning area, is more than 65 miles long in the Raleigh area. Several outcrops of granite can be found in the Rolesville area. The two prominent structural features in the granite are jointing and sheeting, which are easily recognized in the large quarry near Rolesville. In fact it is the sheeting and joining fractures which facilitate quarrying of the material.*

*Geology and Groundwater Resources in the Raleigh Area, North Carolina, N.C. Division of Groundwater, November 1968.

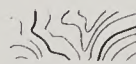


ROLESVILLE NORTH CAROLINA



THIS MAP PREPARED BY THE DIVISION OF COMMUNITY SERVICES,
NORTH CAROLINA DEPARTMENT OF NATURAL AND ECONOMIC RESOURCES,
JULY, 1973.

MAP 4 **TOPOGRAPHY & WOODLANDS**



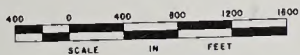
CONTOUR LINES (10 FT. INTERVALS)



WOODLAND AREAS



ROLESVILLE NORTH CAROLINA



THIS MAP PREPARED BY THE DIVISION OF COMMUNITY SERVICES,
NORTH CAROLINA DEPARTMENT OF NATURAL AND ECONOMIC RESOURCES,
JULY, 1973.

MAP 5 **STREAMS & DRAINAGE BASINS**

■■■■■■■■■■ DRAINAGE DIVIDE
A-II, B, D STREAM CLASSIFICATIONS

It is the structural characteristics of this granite which gives it good water-bearing properties. Water is stored in and moves along steeply dipping joints and nearly horizontal sheeting fractures. Adequate domestic supplies can be obtained from drilled wells at most locations. Favorable locations may yield small industrial and municipal supplies. Water from this aquifer is soft and low in iron. Average yield of 217 wells in this material is 17 gpm (gallons per minute).

Adequacy of the granite aquifer is very important for Rolesville since the town depends on it exclusively for its municipal supply, and will have to do so for at least several years. According to a state hydrologist, there is no good information on yields of wells in the Rolesville area, although the state does have one observation well at a stone monument company in Rolesville. The town currently has four wells in operation with one yielding 10 gpm, the second 60 gpm, and two others yielding smaller amounts. These figures are just estimates, however, since twenty-four hour test have not been performed on the town's wells.

Soils*

Soil information is very important for planning purposes, particularly for a town such as Rolesville where septic tanks are the only means for sewage waste disposal. Fortunately, Wake County is one of a few counties in North Carolina which has prepared a detailed soil survey. Although the Wake County soil maps are quite detailed, some caution should be exercised in their use for

*Technical information in this section obtained from the report "Soils Information: Town of Rolesville Planning Jurisdiction," prepared for the Town of Rolesville by Robert V. Carter, Soil Conservationist, in cooperation with the Wake Soil and Water Conservation District, December 1973.

determining capabilities or limitations of individual lots or parcels of land. Boundaries of soil types shown on the maps may not be exact, and minor variations can exist within each series shown. If these cautions are observed, use of the available soils information can do much to ensure that sound growth and development occurs in the Rolesville area.

For planning purposes, it is helpful to classify soils by the degree of limitation for selected uses. The evaluations of soils, expressed in terms of degree of limitations, are predictions of the behavior of soils under defined conditions. The interpretations apply to the soils in their natural state and not for areas altered by cut or fill operations.

Soil limitations are indicated by the ratings slight, moderate and severe, with the following explanations of these terms.

Slight - soil properties generally favorable for the rated use, or in other words, limitations that are minor and easily overcome or modified by special planning and design.

Moderate - soil properties are moderately favorable for the rated use; limitations can be overcome by careful planning and design or by special maintenance.

Severe - soil properties so unfavorable and difficult to overcome as to require major soil reclamation, special designs, or intensive maintenance.

Again, the interpretations will not eliminate the need for on-site study, testing, and planning of specific sites for the design and construction for specific uses. The interpretations can be used as a guide to planning more detailed investigations and for avoiding undesirable sites for an intended use. By using the soil map and interpretations, it is possible to select sites that have the least limitations for an intended use.

Many soils having a high water table have severe or very severe limitations in their natural condition. These same soils, when drained artificially, may only have a slight limitation. Modern equipment and knowledge make it possible to overcome most of the limitations of soils for many urban and recreational uses. The degree of the limitation and the location of the soil will determine the practicability of developing the soil for the intended use. No consideration was given in these interpretations to the size and shape of soil areas, nor to the pattern they form with other soils on the landscape. For example, some very desirable soils areas are too small in size or too irregular in shape, or their occurrence with less desirable soils forms a pattern too complex to be utilized for the intended use. Although not considered in the interpretations, these items should influence the final selection of a site.

Table 2 summarizes some of the limitations of soils in the Rolesville planning area. Since residential construction with septic tanks is the primary type of development taking place in the Rolesville area, the table focuses on limitations for these uses. For degree of limitations affecting other selected land uses such as ponds, roads, and light industry, the reader should refer to the Wake County Soil Survey.

Soil erosion and sedimentation is more of an issue today than ever before, not only because of vocal conservations and environmentalists, but because of new state laws making sedimentation control mandatory. The engineering properties of soils outlined in the Wake County Soil Survey will also be helpful in evaluating erodibility potential of soils in the Rolesville planning area.

SOILS IN THE ROLESVILLE PLANNING AREA, INCLUDING DEGREE OF LIMITATIONS FOR RESIDENTIAL
AND SEPTIC TANK USES

DEGREE OF LIMITATION FOR			
SOIL SERIES	SYMBOL MAP	HOME BUILDING SITES	SEPTIC TANK FIELDS
Appling	ApB, ApB2 ApC, ApC2	slight slight	Mod, med, perc. rate Mod, med, perc. rate
Buncombe	Bu	Severe, flooding	Severe, flooding
Chewacla	Cm	Severe, flooding, high watertable	Severe, flooding, high watertable
Colfax	Cn	Severe, high watertable	Severe, high water- table
Durham	DuB, DuB2 DuC, DuC2	slight slight	Mod, med, perc. rate Mod, med, perc. rate
Enon	EnB	Severe, shrink-swell potential	Severe, slow perc. rate
Helena	HeC2	Severe, shrink-swell potential	Severe, slow perc. rate
Louisburg	LoB, LwB, LwB2 LoC, LwC, LwC2 LoD	Mod, depth to rock is 2 to 5 feet Mod, depth to rock is 2 to 5 feet Moderate, depth to rock is 2 to 5 feet slopes greater than 10% Severe, flooding high watertable Severe, shrink-swell potential Severe, shrink-swell potential Sev, shallow to rock Sev, shallow to rock slight slight Severe, flooding, high watertable Severe, flooding, high watertable	Severe, depth to rock 2 to 5 feet Mod, depth to rock is 2 to 5 feet Mod, depth to rock is 2 to 5 feet Severe, flooding high watertable Severe, slow perc. rate, shrink-swell potential Severe, slow perc. rate shrink-swell potential Sev, shallow to rock Sev, shallow to rock Mod, med, perc. rate Mod, med, perc. rate Severe, flooding, high watertable Severe, flooding, high watertable
Mantachie	Me	Severe, flooding high watertable Severe, shrink-swell potential Severe, shrink-swell potential Sev, shallow to rock Sev, shallow to rock slight slight Severe, flooding, high watertable Severe, flooding, high watertable	Severe, flooding high watertable Severe, slow perc. rate, shrink-swell potential Severe, slow perc. rate shrink-swell potential Sev, shallow to rock Sev, shallow to rock Mod, med, perc. rate Mod, med, perc. rate Severe, flooding, high watertable Severe, flooding, high watertable
Vance	VaB, VaB2 VaC2	Severe, shrink-swell potential Severe, shrink-swell potential Sev, shallow to rock Sev, shallow to rock slight slight Severe, flooding, high watertable Severe, flooding, high watertable	Severe, slow perc. rate, shrink-swell potential Severe, slow perc. rate shrink-swell potential Sev, shallow to rock Sev, shallow to rock Mod, med, perc. rate Mod, med, perc. rate Severe, flooding, high watertable Severe, flooding, high watertable
Wake	Wko WkE	Sev, shallow to rock Sev, shallow to rock slight slight Severe, flooding, high watertable Severe, flooding, high watertable	Sev, shallow to rock Sev, shallow to rock Mod, med, perc. rate Mod, med, perc. rate Severe, flooding, high watertable Severe, flooding, high watertable
Wedowee	WmB, WmB2 WmC2	Sev, shallow to rock Sev, shallow to rock slight slight Severe, flooding, high watertable Severe, flooding, high watertable	Sev, shallow to rock Sev, shallow to rock Mod, med, perc. rate Mod, med, perc. rate Severe, flooding, high watertable Severe, flooding, high watertable
Wehadkee	Wo	Severe, flooding, high watertable Severe, flooding, high watertable	Severe, flooding, high watertable Severe, flooding, high watertable
Worsham	Wy	Severe, flooding, high watertable Severe, flooding, high watertable	Severe, flooding, high watertable Severe, flooding, high watertable

Figure 6 shows soil types in the Rolesville planning area, and is color coded to show the degree of limitation for development with septic tank fields. Also shown are those areas subject to periodic flooding as indicated by alluvial (water deposited) soils. Although not true in every case, soils unsuitable for development with septic tanks are often unsuited for urban development in general. This is particularly true of soils with a high shrink-swell potential and those subject to periodic flooding.

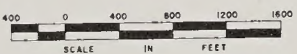
Some obvious patterns are discernible from the soils map. Those areas best suited for development are to the north and southeast of Rolesville, with many of the other areas having large expanses of unsuitable soils. Unfortunately, those soils with the least limitations for development are also the most productive agricultural soils. This means that unless some policy is made to help preserve good agricultural soils for that use, they may be lost forever forcing farmers to ultimate less productive or marginal lands. We might be seeing some kind of state and/or national policies in regard to preservation of prime agricultural lands as an outgrowth of land use legislation. Serious consideration should be given to how we can best preserve this valuable resource.



MAP 6

ROLESVILLE
NORTH CAROLINA

SOILS WITH SEPTIC TANK LIMITATIONS



ALLUVIAL SOILS



UNSUITABLE FOR SEPTIC TANKS FOR
REASONS OTHER THAN PERIODIC FLOODING

THIS MAP PREPARED BY THE DIVISION OF COMMUNITY SERVICES,
NORTH CAROLINA DEPARTMENT OF NATURAL AND ECONOMIC RESOURCES,
JULY, 1973.

LAND USE

The pattern of land uses in any community reflect historic and cultural influences over the period of time that community was developing. In Rolesville we find that, as a trading center for local farmers, general retail uses were established at the main intersection in town. Early residential growth was also focused near the town's center, primarily along North and South Main Street. Recent growth has been primarily residential in character, and near or just outside the town limits. Examples of this newer growth can be found in Brown's Subdivision off of Forestville Road, and north of Rolesville along Young Street.

Existing Land Uses

Existing land uses in the Rolesville planning area were inventoried and charted on maps in a survey conducted September 1973. These land uses were categorized into seven classifications according to criteria in the U.S. Department of Transportation's Standard Land Use Coding Manual. Results of this survey, broken down by acres inside Rolesville's town limits, acres outside town limits and total acres in the planning area, are shown in Table 3. Land uses are also shown on Figure 7.

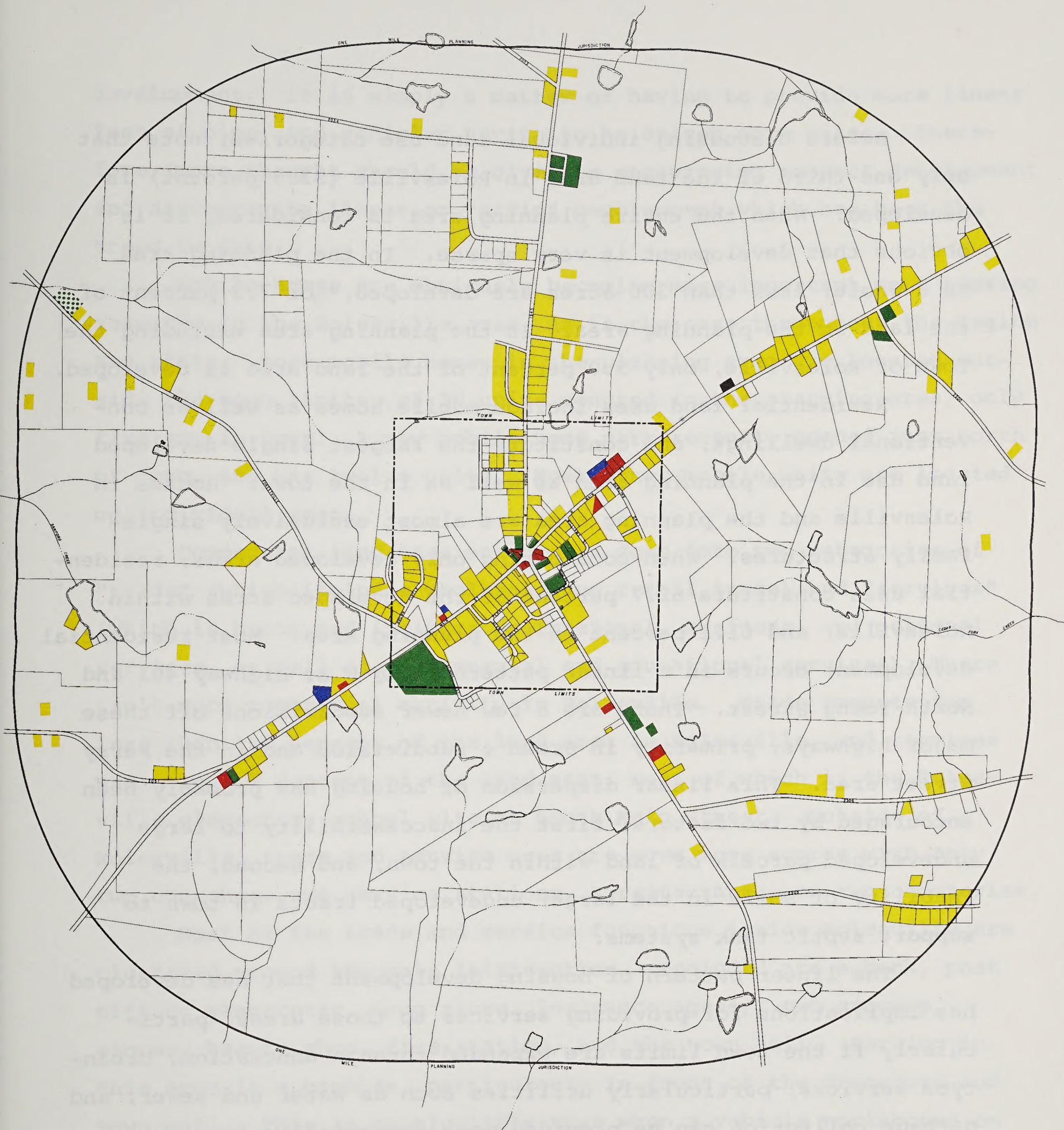
TABLE 3

EXISTING LAND USE, SEPTEMBER 1973: TOWN OF ROLESVILLE AND ROLESVILLE
PLANNING AREA

Land Use	Acres Inside Town	% of Total Acres Inside Town	Acres Outside Town	% of Total Acres Outside Town	Total Acres in Planning Area	Percent of Total Acres in Planning Area
Residential	69.0	21.0	114.1	3.0	183.1	4.5
Trade	3.2	1.0	2.0	0.1	5.2	0.1
Services	12.2	3.7	8.5	0.2	20.7	0.5
Cultural, Enter- tainment, Recrea- tion	--	--	1.0	0.1	1.0	0.1
Manufacturing	1.4	0.4	5.0	0.1	6.4	0.1
Transportation, Communication, & Utilities	24.2	7.4	59.9	1.6	84.1	2.0
Total Developed Land	110.0	33.5	190.5	5.1	300.5	7.4
Undeveloped and Vacant Land	218.0	66.5	3,580.5	94.9	3,798.5	92.6
TOTAL AREA	328.0	100.0	3,771.0	100.0	4,099.0	100.0

SOURCE: DCS survey, September 1973.

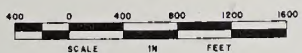
Note: Individual items may not add to totals due to rounding.



MAP 7

EXISTING LAND USE

ROLESVILLE
NORTH CAROLINA



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NORTH CAROLINA DEPARTMENT OF NATURAL AND ECONOMIC RESOURCES,
JULY, 1973.

- RESIDENTIAL
- TRADE
- SERVICES
- CULTURAL, ENTERTAINMENT, & RECREATION
- TRANSPORTATION, COMMUNICATION, & UTILITIES
- INDUSTRIAL

Before discussing individual land use categories, note that only one-third of the land area in Rolesville (33.5 percent) is developed. When the entire planning area is considered, it is obvious that development is very sparse. In the planning area as a whole, less than 300 acres are developed,* or 7.3 percent of the land in the planning area. In the planning area excluding the Town of Rolesville, only 5.0 percent of the land area is developed.

Residential land uses include mobile homes as well as conventional dwellings, and constitute the largest single developed land use in the planning area as well as in the town. Houses in Rolesville and the planning area are almost exclusively single-family structures. When considering only developed areas, residential uses constitute 62.7 percent of the developed acres within Rolesville, and 61.1 percent in the planning area. Most residential development occurs in a linear pattern along U.S. Highway 401 and North Young Street. There are a few newer subdivisions off these major highways, primarily in Brown's subdivision and in the Perry Street area. This linear dispersion of housing has probably been encouraged by two factors: first the inaccessibility to large undeveloped parcels of land within the town, and second, the inability of soils in the larger undeveloped tracts in town to support septic tank systems.

The linear pattern of housing development that has developed has implications for providing services to those areas, particularly if the town limits are expanded through annexation. Urban-type services, particularly utilities such as water and sewer, and garbage collection can be provided more economically for compact

* "Developed" land includes streets and highways under the category of "transportation, communication, and utilities."

development. It is simply a matter of having to provide more linear feet of pipe, and vehicles having to be driven more miles. Therefore, more thought should be given to encouraging compact development and discouraging linear or "strip" development which has been the trend to date.

Mobile homes are obviously becoming more important as a housing resource in the Rolesville area, as is the case throughout the region and state. Most mobile homes in the planning area are located outside the town limits; of 38 units counted in the planning area, only five are in town. A new mobile home park recently opened just north of town, and has twelve units. Most other mobile units are located on individual lots.

Commercial land uses are broken down into two categories of "trade" (which includes wholesale and retail trade) and "services" (which is broad and includes professional, business, and personal services, as well as governmental and educational services). There isn't much commercial activity in Rolesville. Trade amounts for less than 1.0 percent of the land area in Rolesville, and services use only 3.7 percent of the land area, most of which is the Rolesville elementary school site on South Main Street. Outside of Rolesville, trade and service uses are even more scarce with only two churches, two service stations, a restaurant, and two cemeteries.

Most of the trade and service functions inside Rolesville are clustered around the main intersection. Included are a bank, post office, washerette, drug store, insurance agency, two grocery stores, beauty shop, fire station, and the town hall. Parking in this area is a problem, particularly in front of the drugstore and town hall. This is particularly true when a vehicle northbound on Main Street has to turn sharply to the left in front of oncoming traffic to get into the angle parking spaces. It would be better to encourage parking to the rear of these buildings.

Manufacturing is limited to two monument companies on Main Street in Rolesville and the Rolesville Garment Company southwest of town on U.S. Highway 401. Only 6.4 acres of land are in manufacturing uses in the planning area, five of which are outside the town limits.

Transportation, communication, and utilities account for 7.4 percent of the land area in Rolesville and 2.0 percent in the planning area. Most of the uses in this category are streets and highways. Other land uses in this category include the parcel the town's elevated water storage tank is on and the C P & L substation on U.S. Highway 401 north of town. If only developed land in Rolesville is considered, this category accounts for almost 25 percent of the land area, which is common for cities and towns in North Carolina.

Land Use Problems

Land use problems in the Rolesville planning area include the trend towards linear or "strip" development discussed under residential land uses, some incompatible mixed land uses in close proximity to one another, and substandard housing.

While mixed land uses do not appear to be a severe problem at the present time, it could develop as such if allowed to continue unchecked. The monument companies are buffered from surrounding uses by vacant land, although there are houses on both sides of the Wiggins operation. Future residential construction in these areas could create problems. Another example is the used car lot on a residential lot on North Main Street. There are houses on both sides of this lot and, although the business operation is quite small at the present time, there is no way to keep

it from growing and becoming a potential nuisance to adjacent property owners. These problems point out the need for zoning in Rolesville so that similar land uses can be grouped together for everyone's mutual benefit and protection.

Housing conditions in Rolesville are generally quite good, with older homes being well maintained. This is not the case outside of town. Over 86 percent of the dwellings in Rolesville are "sound", whereas only 50.9 percent outside of town fall into this category. In Rolesville, only 9.3 percent of the dwellings are substandard (either deteriorating or dilapidated), and outside of town the figure is 29.8 percent. Additional data on housing conditions are shown in Table 4.

TABLE 4
HOUSING CONDITIONS, SEPTEMBER 1973: TOWN OF ROLESVILLE AND ROLESVILLE
PLANNING AREA

Condition	Number Inside Town	Percent Inside Town	Number Outside Town	Percent Outside Town	# Total Planning Area	Percent of Total
Sound ¹	111	86.7	87	50.9	198	66.2
Deteriorating ²	9	7.0	21	12.3	30	10.0
Dilapidated ³	3	2.3	30	17.5	33	11.0
Mobile Home	5	3.9	33	19.3	38	12.7
Total	128	100.0	171	100.0	299	100.0

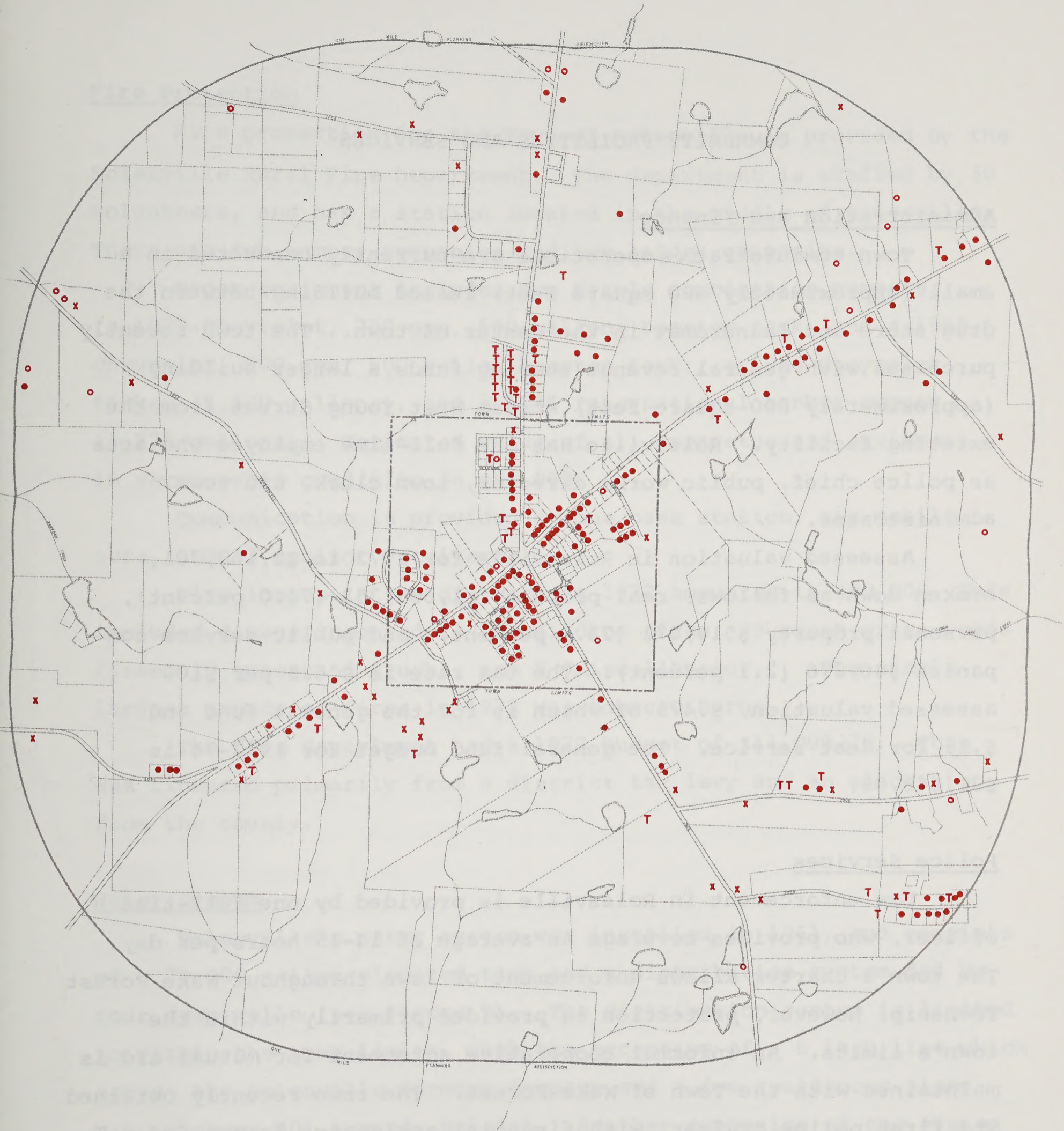
SOURCE: Field Survey conducted September 1973.

¹Sound - No visible defects, or only slight defects normally corrected during regular maintenance.

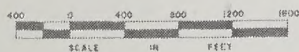
²Deteriorating - One or more defects which require more than "normal" maintenance, such as missing shingles, sagging porch, etc.

³Dilapidated - Severe structural defects which render the dwelling uneconomically repairable. Does not provide safe and adequate shelter.

Substandard housing within Rolesville is not clustered in any one location, but consists primarily of scattered deteriorating dwellings which could be rehabilitated. Outside the town, however, there are obvious concentrations of poor housing, most of which is inhabited by blacks. The largest single concentration is south of the school property just outside the town limits. This is also an area where public health may be a problem because many houses use outdoor privies; septic tanks, even if installed, would probably not be effective due to shallow soils. Housing conditions are shown in Figure 8.



ROLESVILLE NORTH CAROLINA



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NORTH CAROLINA DEPARTMENT OF NATURAL AND ECONOMIC RESOURCES,
JULY, 1975



MAP 8 **HOUSING CONDITIONS**

- STANDARD
- DETERIORATING
- X DILAPIDATED
- T MOBILE HOME

COMMUNITY FACILITIES AND SERVICES

Administration and Finance

Town administrative operations are currently conducted in a small (approximately 480 square feet) leased building between the drug store and laundromat in the center of town. The town recently purchased, with general revenue sharing funds, a larger building (approximately 800 square feet) across West Young Street from the existing facility. Rolesville has one full-time employee who acts as police chief, public works director, town clerk, and town administrator.

Assessed valuation in Rolesville for 1973 is \$2,168,701, broken down as follows: real property \$1,603,353 (74.0 percent), personal property \$519,072 (23.9 percent), and public service companies \$46,276 (2.1 percent). The tax rate is \$.625 per \$100 assessed valuation, \$.475 of which is for the general fund and \$.15 for debt service. The general fund budget for 1973-74 is \$31,646.08.

Police Services

Law enforcement in Rolesville is provided by one full-time officer, who provides coverage an average of 14-15 hours per day. The town's charter allows enforcement of laws throughout Wake Forest Township, however, protection is provided primarily within the town's limits. An informal cooperative agreement for mutual aid is maintained with the Town of Wake Forest. The town recently obtained its first police cruiser, with financial assistance from a federal grant.

Fire Protection

Fire protection for the Town of Rolesville is provided by the Rolesville Rural Fire Department. The department is staffed by 30 volunteers, and has a station located in the middle of Rolesville. There are two pumper companies and two ladder companies.

Major equipment includes two triple combination pumpers (a 1972 Chevrolet, 750 gpm, 500 gallon booster tank, and a 1958 Chevrolet, 500 gpm, 500 gallon booster tank), a 1964 Chevrolet tanker (1,500 gallons), and a 1945 International tanker-pumper (1,275 gallons). Estimated value of all apparatus and equipment in serviceable condition is \$50,000.

Communication is provided by one base station, six mobile sets, and 35 monitor receivers.

Fire losses in the district in 1972 amounted to \$80,000. This included damage incurred in 25 building fires, 29 brush-grass-woods fires, 10 autos and trucks, and 8 "miscellaneous." The single largest source of fires in 1972 was tobacco barns.

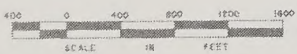
The fire department had a 1972 budget of \$11,090.78. This was financed primarily from a district tax levy and an allocation from the county.

Water System

Rolesville's water system was installed in 1961, and consists of a 75,000 gallon elevated tank and a distribution system fed by four deep wells (see Figure 9). The distribution system is limited to within the town limits, with the exception of a 6 inch line which serves the Rolesville Garment Company and a few residences along U.S. Highway 401 towards Raleigh. Another expansion of the system outside the town is proposed, however, and will be discussed later.



ROLESVILLE NORTH CAROLINA



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MAP 9 **WATER SYSTEM**

6" WATER LINES

The town's wells yield a combined total of approximately 100 gpm (gallons per minute). Well number 3 provides most of this with 60 gpm, followed by well number 1 (10 gpm) and wells 4 and 5 (less than 15 gpm each). Well number 3 is used most frequently, and is pumped at 35-40 gpm. Tests have never been made to determine if well number 3 could be pumped at its maximum yield 24 hours per day. Such a test has been recommended by the state hydrologist responsible for Wake County, to determine if adequate supplies would be available when needed. Technical assistance in performing such a test can be obtained from state hydrologists.

The quality of groundwater in the Rolesville area is good, and no treatment is provided. Chlorine is available, if needed, on wells number 1 and 3. A detailed chemical analysis of the water is not available at this time.

Water for each customer in Rolesville is metered. Average daily consumption is 32,000 gpd which means that well number 3, used alone, can supply the town's needs when pumped at 40 gpm for 13.3 hours per day. Maximum daily use is about 35,000 gpd. Largest water users in the community are the school, the laundromat, and Rolesville Garment Company.

Per capita water consumption in Rolesville is quite low (54 gallons per capita per day based on 500 persons served), compared to other communities where 150 gallons per capita per day is not uncommon. This is due primarily to the low number of industrial/commercial users in Rolesville. Of course, one large water-using industry could change this picture dramatically in the future. Since the town is using only about one-fourth of its developed ground water supply at the present time, normal growth should be easily accommodated for several years unless a large water-using industry taps into the system.

As mentioned earlier, plans have been drawn for extending Rolesville's water distribution system outside the town limits. A 12 inch line will be constructed along SR 1945 (West Young Street) from 750 feet inside the town limits to the intersection of SR 2053. This extension will be financed by Wake County under a perimeter agreement with the Town of Rolesville. Under this agreement, the town will collect acreage fees when new customers tap onto the line and remit these fees to the county, thereby gradually repaying the county for its investment in the water line. This line will ultimately tie Rolesville into the Raleigh system via Wake Forest. According to the Wake County Water and Wastewater Engineering Study, this tie-in should be completed by 1980. Of course, this proposed schedule is dependent on Raleigh's ability to augment its raw water supply, which is rapidly becoming inadequate for its own needs. Should the Falls of the Neuse reservoir be constructed as proposed, there won't be any problem getting an adequate raw water supply. However, if the reservoir project is delayed, the county's water program will also be delayed. Therefore, Rolesville should continue to rely primarily on its own water resources to supply its needs for the foreseeable future. It is also recommended that, after Rolesville taps into the Wake County system, it maintain its wells and pumps as an emergency water source should anything happen to interrupt the supply from Raleigh.

Sanitary Sewer System

Rolesville does not have a sanitary sewer system at this time. Disposal of domestic wastes is accomplished through either individual septic tanks or outdoor privys. Problems with septic tanks in the Rolesville area were discussed previously with soils information. Growth and development in the Rolesville area, particularly industrial and commercial growth, is limited without a sanitary sewer system. Existing problems with malfunctioning septic tanks are likely to become more severe in years ahead unless the following actions are taken: 1) stricter regulation of individual septic tanks, particularly in regard to soils unsuited for soil absorption systems, and 2) construction of a wastewater collection and treatment system.

A wastewater collection and treatment system for Rolesville alone is not practical since it would involve a huge expense, and federal funding under current programs, which stress areawide systems, could not be obtained.

Plans for bringing Rolesville into the Wake County wastewater interceptor and treatment system are included in the Wake County Water and Wastewater Engineering Study. According to these plans, interceptor sewers will carry wastewater from Rolesville via Sanford Creek and Smith Creek watersheds to the Neuse River, interceptor, and then to the Neuse River wastewater treatment plant. A pumping station would be required to lift wastewater from the Cedar Fork Creek watershed to the Harris Creek watershed. Service in the Perry Creek watershed would also necessitate a pumping station, most likely to Sanford Creek (see Figure 5).

Unfortunately the plans for connecting the Town of Rolesville to the Wake County waterwater collection system indicate construction sometime after 1990. Fifteen or twenty years is a long time for Rolesville to wait for this service, however recent developments in areawide wastewater treatment facility programs may shed some encouraging light on this otherwise bleak picture. Communities in Wake County, as well as others throughout Region "J", are working on "201" facilities plans required by the Environmental Protection Agency as a prerequisite for certain federal grants towards wastewater treatment facilities. The Town of Rolesville is joining with Wake Forest and Youngsville as a "201" designated planning area for development of sewage treatment facilities. This may help speed the process of funding for the Neuse River plant. In addition, certain communities in Wake, Orange, and Durham Counties (including the Town of Rolesville) are participating in a "208" facilities plan, which is a more sophisticated version of the "201" plan, and on a pilot program basis, may further enhance construction of needed facilities.

Of course, the success of these programs is dependent on implementation after the planning phases, and this in turn depends on adequate levels of funding from Washington. Although large amounts of money had been authorized by the Congress for water pollution abatement programs, most has been impounded by the administration. Indications are that more money will be available in fiscal year 1975 and later, but the exact level of funding will significantly affect the timetable of when Rolesville can expect sanitary sewer facilities.

Solid Waste Disposal

Solid waste (garbage) collection and disposal is provided by a private firm under contract with the town. Pickup is provided at the rear of homes once weekly. The Wake County landfill is used for disposal.

Transportation Facilities

Streets and highways are the major transportation consideration in Rolesville. Within the town there are 1.98 miles of state maintained roads (all paved), and 1.71 miles of town maintained roads (1.61 miles paved and 0.10 miles unpaved). Rolesville does not have a street maintenance capability, so it uses Powell Bill funds to contract with the state for maintenance. Outside of town, but within the planning area, there are an additional 9.09 miles of state maintained roads and highways.

The major highway serving Rolesville is U.S. Highway 401, which links Rolesville to Raleigh and Louisburg. Secondary Roads 2053, 2054, and 2052 provide good access to Wake Forest and points west (including Durham via Highway 98), and SR 1003 provides a link to the eastern Wake County towns of Zebulon and Wendell.

Traffic volumes in the Rolesville planning area are highest on U.S. Highway 401 south of its intersection with Young Street (SR 1945). This segment has a volume of 5,950 vehicles per day, ADT.* North of the intersection volume falls to 4,950 vehicles per day. The practical capacity of a two-lane facility ranges between 5,700 and 8,200 vehicles per day (variations coming from speed limit, traffic signals, curb cuts, etc.). Using these criteria, this highway may need widening and/or relocation (a bypass) in the not-too-distant future. However, there are no plans for modifying this highway during the time frame of the state's 7-year

*ADT - Average Daily Traffic. All ADT figures are 1972 counts.

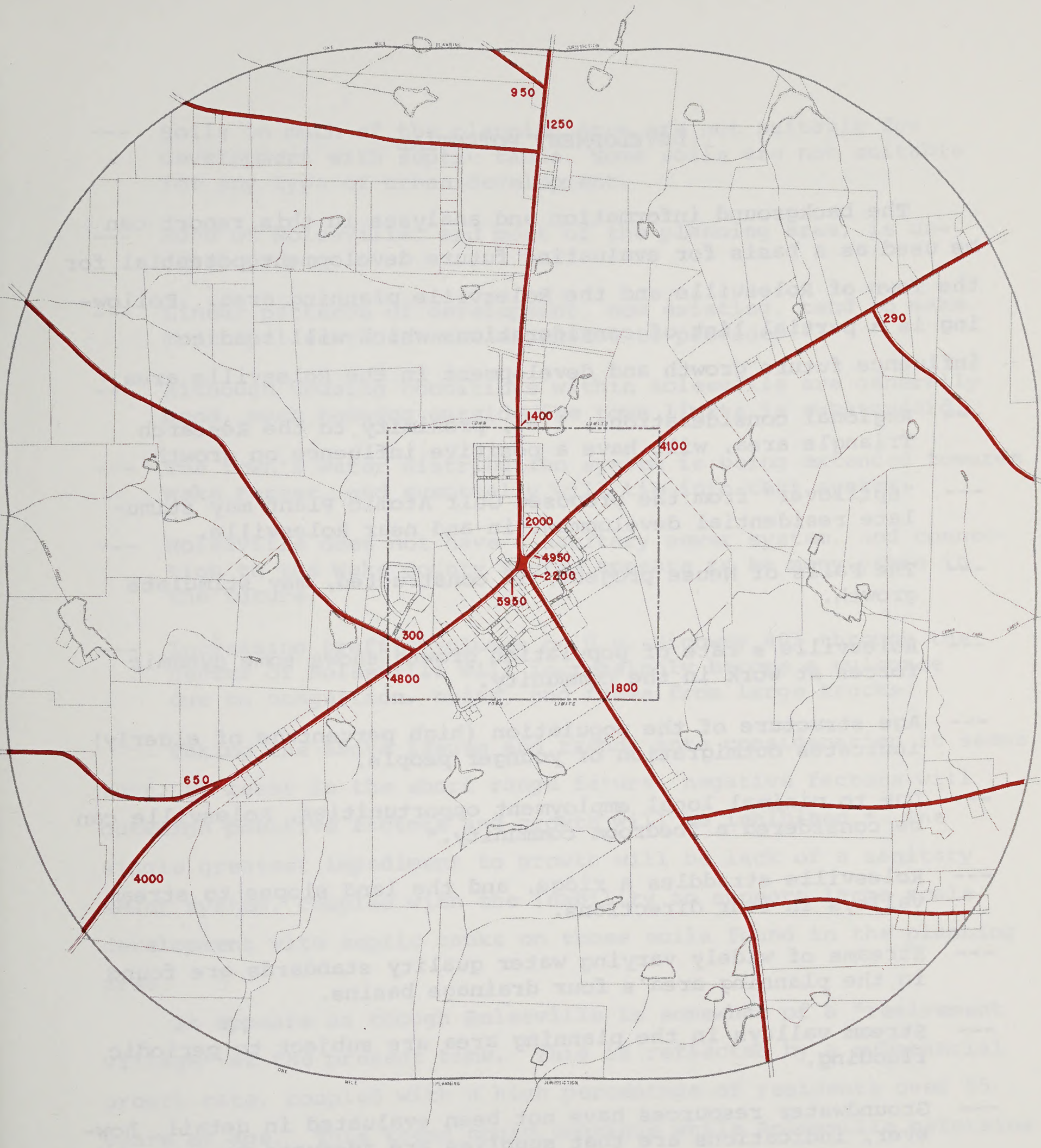
highway improvement program. It may be ten years or longer before this highway is improved. Traffic volumes on other streets and highways in the planning area (see Figure 10) indicate that they are being used far below capacity and should be adequate for at least the next twenty years.

The only planned improvement for streets and highways in the planning area is a redesign-rebuilding of the traffic islands at the intersection of Main and Young Streets. This project, which is supposed to be undertaken in the near future, will make turning movements onto U.S. Highway 401 safer and easier, particularly for large trucks.

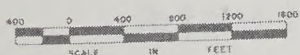
With respect to long range planning, Rolesville should be concerned with two aspects of its street system. First, consideration should be given to the best location for a bypass route of U.S. Highway 401. (This should be coordinated with the state Department of Transportation.) Second, some systematic street maintenance program should be devised, telling which streets will be repaired, surfaced, or resurfaced over a 5 to 10 year period.

Recreation Facilities

Noticeably absent in Rolesville are any parks and recreation facilities, other than those adjoining the school. With more leisure time available today than ever before, some serious planning and programming should be done by the town to ensure that adequate recreation facilities are available to townspeople. The sooner money is set aside for this purpose, the sooner people will have access to these facilities which no longer are considered "frills," but necessities.



ROLESVILLE NORTH CAROLINA



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NORTH CAROLINA DEPARTMENT OF NATURAL AND ECONOMIC RESOURCES,
JULY, 1973



MAP 10 **ROADWAY SYSTEM**

- STATE MAINTAINED ROADS
- 4800 AVERAGE DAILY TRAFFIC VOLUMES (1972)

DEVELOPMENT POTENTIAL

The background information and analyses in this report can be used as a basis for evaluating future development potential for the Town of Rolesville and the Rolesville planning area. Following is a partial list of considerations which will tend to influence future growth and development in the Rolesville area.

- Regional considerations, i.e., proximity to the Research Triangle area, will have a positive influence on growth.
- "Spillover" from the proposed Gulf Atomic Plant may stimulate residential development in and near Rolesville.
- The Falls of Neuse project, if constructed, may stimulate growth.
- Rolesville's rate of population growth shows some dynamic forces at work in the community.
- Age structure of the population (high percentage of elderly) indicates outmigration of younger people.
- Due to minimal local employment opportunities, Rolesville can be considered a "bedroom community."
- Rolesville straddles a ridge, and the land slopes to stream valleys in four directions.
- Streams of widely varying water quality standards are found in the planning area's four drainage basins.
- Stream valleys in the planning area are subject to periodic flooding.
- Groundwater resources have not been evaluated in detail, however, indications are that supplies are adequate to accommodate residential growth for at least 25 years.

- Soils in much of the planning area are not suitable for development with septic tanks. Some soils are not suitable for any type of urban development.
- Much of Rolesville, and most of the planning area, is undeveloped.
- Linear patterns of development, now existing, tend to make municipal services more expensive to provide.
- Although housing conditions within Rolesville are generally good, much housing outside the town limits is substandard.
- The town's water distribution system is being extended towards Wake Forest, and eventually will tie into that system.
- Rolesville does not have a sanitary sewer system, and connection to the Wake County system appears to be many years in the future.
- Increasing traffic volumes on U.S. Highway 401 through the center of Rolesville will increasingly become a nuisance due to congestion, noise, and fumes from large trucks.

Taking the above issues and trends into consideration it seems that, at least in the short range future, negative factors will outweigh positive factors and growth will be inhibited.* The single greatest impediment to growth will be lack of a sanitary sewer system, coupled with the inability to support large scale development with septic tanks on those soils found in the planning area.

It appears as though Rolesville is somewhat of a "retirement village" at the present time. This is reflected by a substantial growth rate, coupled with a high percentage of residents over 65 years of age. This trend could continue while Rolesville maintains its "bedroom community" character.

*This should not be construed to mean that growth is necessarily desirable. The town's attitude toward growth, and its growth objective, will be discussed in the Development Plan, which follows.

In the longer time frame (20 years-plus hence), regional conditions could have more of an impact, and Rolesville might grow more rapidly. In particular, the Gulf Atomic plant and Falls of the Neuse reservoir, together with expected growth of Wake Forest, will begin to exert more development pressure on smaller towns such as Rolesville. Connecting to Raleigh's water and wastewater treatment systems will, of course, give Rolesville the capability to handle development pressures and provide basic community facilities. Before this occurs, Rolesville officials should adopt basic growth policies to help ensure that growth which does occur is well managed.

THE DEVELOPMENT PLAN

INTRODUCTION

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INTRODUCTION

The basis of plan formulation is the planning process discussed in the beginning of this report. Background information was gathered and analyzed, and from this the potential for development in Rolesville was ascertained.

The growth objective for Rolesville will now be discussed, and a physical land use plan will be developed to show how this growth objective can be achieved.

Plan recommendations in this report can be used for a number of purposes, both public and private. As a guide for public decision-making, it should serve as the basic framework for writing the town's zoning ordinance, for establishing priorities in capital expenditures, for determining where annexation should be pursued, and a number of other factors discussed more fully in the "implementation" section. For the private sector, the plan is a statement, both verbal and graphic, of the town's adopted planning policies which should be carefully studied before making real estate investment decisions.

This plan should not be static, but should be used, updated and amended whenever necessary to meet changing conditions and needs. This is not to say that changes should be made haphazardly, for there should be some stability in the development plan; however there should be little reluctance to modify the plan if it is later proven to be necessary.

DEVELOPMENT GOALS

The growth objective for Rolesville was determined from comments made by planning board members as to what they felt most townspeople would like Rolesville to become. From those comments a consensus was reached that Rolesville should attempt to keep its small town atmosphere, basically residential in character. Some new commercial growth would be desirable, along with limited light industrial development. Figures mentioned as a "nice population size" for Rolesville ranged from 1,000 to about 2,500 persons. This is a realistic growth objective in terms of the town's development potential discussed previously.

Town policies and programs should be consistent with the growth objective, and should also reinforce, or compliment, the following goals to help achieve a good living environment for all Rolesville residents.

Discourage the development of land which is unsuitable for urban use because periodic flooding, poor soils, and other important environmental factors.

Strive to develop and maintain efficient and effective public utilities and community facilities to meet present and anticipated future needs.

Recreation facilities should be provided at the earliest possible date.

Encourage efficient use of land through compact development requiring a minimum of public and private expenditures.

Promote a transportation system which will adequately serve the needs of Rolesville residents, while allowing truck and through traffic to bypass the town.

Adopt regulatory measures (zoning, subdivision regulations, building code) necessary to ensure good land use and building practices.

Support the Triangle "J" Council of Governments and participate in regional programs which can help Rolesville achieve its growth objective.

FUTURE LAND USES

The land development plan, shown in Figure 11, is an attempt to show how the town's growth objective and development goals can be at least partially achieved through proper arrangement of land uses. In arriving at the land use scheme shown in Figure 11, two variables were considered: first, the amount of land which would be required to accommodate projected growth to the year 2000, and second, the locations of these land uses. These two variable will be discussed next, beginning with the amount of land required.

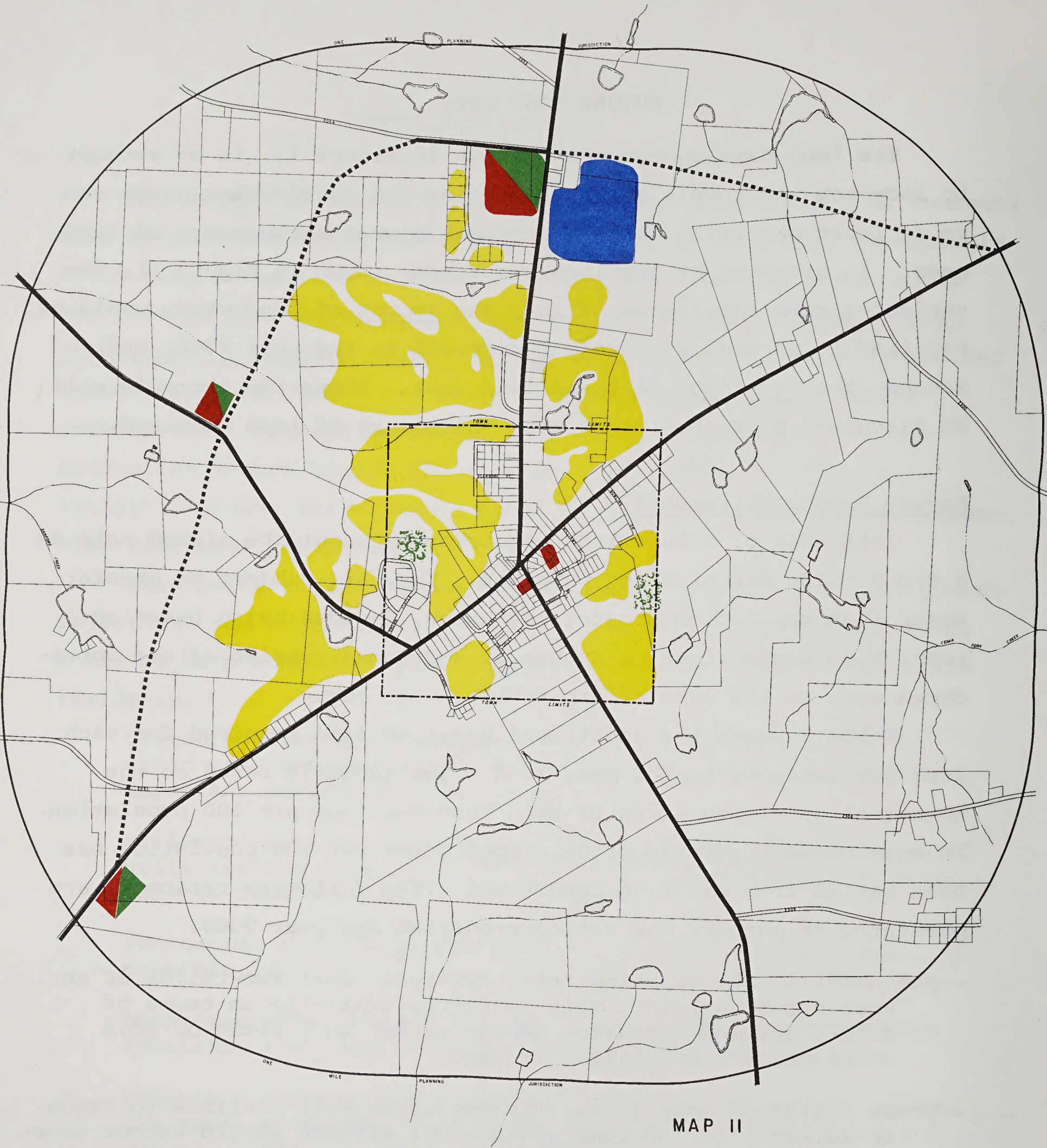
Future Land Requirements

Estimates of future land requirements should be viewed only as a broad guide for planning purposes. They are subject to greater error than population projections since, besides being based on population projections, a number of additional variables are introduced such as the type of growth likely to occur.

Table 5 shows the additional acres of land required for each land use category to the year 2000. The table is based on the number of developed acres of each land use type per 100 population. In most cases the ratio of developed acres per 100 population has been varied from existing conditions. The following rationalé are presented to support the ratios projected for year 2000.

--Residential: The existing ratio averages about two-thirds of an acre per household. This is fairly realistic in terms of future development using septic tanks, so a ratio of 20.5 acres per 100 population is used.

--Trade: Although many Rolesville residents will continue to trade in Raleigh, as the town grows goods offered should become somewhat more diversified, so the ratio is increased from 0.6 to 0.8 acres per 100 population.



MAP II

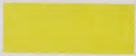


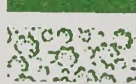



LAND DEVELOPMENT PLAN

ROLESVILLE
NORTH CAROLINA

400 0 400 800 1200 1600
SCALE IN FEET



THIS MAP PREPARED BY THE DIVISION OF COMMUNITY SERVICES,
NORTH CAROLINA DEPARTMENT OF NATURAL AND ECONOMIC RESOURCES,
JULY, 1973

- | | |
|---|-------------------------------------|
|  | RESIDENTIAL |
|  | TRADE |
|  | SERVICE |
|  | RECREATION |
|  | LIGHT INDUSTRIAL |
|  | THOROUGHFARE --- EXISTING ALIGNMENT |
|  | THOROUGHFARE --- PROPOSED ALIGNMENT |

- Services: Demand for personal services is likely to grow as incomes increase. However, much of the existing service category land consists of cemeteries and the school. With no new schools expected in Rolesville, the ratio may decrease to 2.0 acres per 100 population.
- Cultural, Entertainment, Recreation: Although substantial growth in this category is not expected, hopefully the town can have some kind of park facility as soon as possible, even if local clubs and organizations must be solicited for help in developing such facilities. The ratio is increased from less than 0.1 to 0.5.
- Manufacturing: In view of the water/sewer situation, large scale industrial growth in Rolesville is unlikely. There may be some growth in this category later in the planning period, depending on town policies towards industrial development. The ratio is increased from 0.7 to 2.0 acres per 100 population.
- Transportation, Communication, Utilities: Little change is expected in this category since it is primarily street and highway rights-of-way. The ratio of 9.5 acres per 100 population is retained.

TABLE 5

FUTURE LAND REQUIREMENTS, 1974-2000: ROLESVILLE PLANNING AREA

LAND USE CLASSIFICATION	Rolesville Planning Area 1974		Rolesville Planning Area 2000		Additional Acres Required 1974-2000
	Developed Acres	Developed Acres per 100 pop.	Developed Acres*	Developed Acres per 100 pop.	
Residential	183.1	20.8	410	20.5	227
Trade	5.2	0.6	16	0.8	11
Services	20.7	2.4	40	2.0	19
Cultural, Enter- tainment, Rec.	1.0	.1	10	0.5	9
Manufacturing	6.4	0.7	40	2.0	34
Transportation, Com., & Util.	84.1	9.5	190	9.5	106
Total Developed	300.5	34.1	706	35.1	402
Undeveloped and Vacant	3,798.5		3,393		

*Based on year 2000 projected population of 2,000 for the Rolesville planning area.

NOTE: Projected acreages rounded to whole numbers.

Location Considerations

Good growth and development which will be an asset to the entire community cannot be haphazard. It must be guided and directed to ensure that land use patterns will be functional, visually pleasing, and economical to provide with public services. Growth patterns should be determined by topography, soils, accessibility to related uses and public services, and relationship to existing land use patterns. Generally, the goal is to maximize environmental quality, mobility, and choice, while minimizing waste, inefficiency, environmental degradation, and other social, physical, and economic costs.

General guidelines, called "locational criteria," have been devised for each category of land use and provide the basis for selecting particular areas for future land use requirements. These locational criteria by land use category will now be discussed, along with locations in the Rolesville planning area which fulfill some or all of these requirements.

Manufacturing

Industrial firms have perhaps the most precise needs in terms of location, and for this reason prime industrial land is at a premium and should be preserved for this use. The following site selection criteria usually apply:

1. Sites should be located on land with a slope of preferably not more than five percent; few manufacturers are interested in sites requiring extensive, costly grading and similar site preparation activities.
2. Sites should be easily accessible for plant workers. Location near interconnecting major highways is imperative. This provides access for employees as well as transportation facilities for trucking. Certain types of industries require locations that have railroads, waterways, or airports and sometimes combinations of these three.

3. Adequate utilities are needed, including water, sewer, and power.
4. Land area should incorporate adequate off-street parking and sufficient allowance for future plant expansions. This requirement generally necessitates that sites be at least 50 acres in size at a minimum.
5. Landscaping and buffer zones should be provided naturally (or by development) to separate industrial activity from other uses which might find routine operations, noise, traffic and other aspects of normal manufacturing objectionable.
6. Prevailing wind direction should be considered so that dissipation of smoke and odors can be accomplished with as little inconvenience as possible. Since prevailing winds are from the southwest, plant sites should be located on the north or east sides of the town.
7. Characteristics of the soil should be known. There should be no underlying rock which would be expensive to excavate, and the soil should be sufficiently compact for at least normal loadbearing characteristics.
8. Prospective industrial sites should be protected from encroachment by other uses of zoning. Premature intrusion of residential subdivisions can ruin an area's desirability for manufacturing use.

Although industrial development in Rolesville is not likely to be on a large scale, some land should be planned for this purpose. Most of the above criteria can be satisfied by the site shown as industrial in Figure 11 (the Land Development Plan). The site has moderate slopes, and is adjacent to a proposed 12 inch water line. Soils on most of the site could be built upon. Since prevailing winds are from the southwest most of the year, the site is "downwind" from the town. Although the site straddles two watersheds, the plant could be situated so effluent flows westward to Sanford Creek

(which is Class "D"). The site is shown abutting a proposed U.S. Highway 401 bypass around Rolesville, but even if such a bypass were not constructed the site would have good access to U.S. Highways 1 and 401.

Trade

Nearly every community has evolved with a central shopping area at its center. Typically, central business areas are characterized by a gridiron street pattern, inadequate parking, and conflict of automobile, pedestrian, and in many instances, railroad traffic.

The second stage in the evolution of typical commercial development is the movement of some uses to locations on arterial highways where stores are easier to reach by car and adequate parking can be provided because land is cheap (at least initially); limited "strip" commercial development can be desirable for some types of trade activities provided proper controls are applied to insure that safe driveways are constructed and the commercial areas are distinct groupings of limited size rather than an infinite string.

The typical third stage in the evolution of commerce is the advent of the remote shopping center, frequently using an air conditioned mall, providing ample parking and ease of access, along with unified architectural design. Such centers are generally classified as either neighborhood, community, or regional, according to their physical size and the retail market area upon which they draw.

Development in the Central Business District should generally adhere to the following principles:

1. It should have adequate ingress and egress for traffic. A loop street around the CBD should be provided to relieve vehicular congestion.
2. Provision should be made for off-street parking and off-street loading.
3. Provide adequate land for pedestrian ways and utilize green areas as a means of a buffering zone for adjoining incompatible land uses. This can also act as a means of beautifying the CBD.
4. Rear store areas should be improved by landscaping, and paved parking areas should have access to the loop street system.

New shopping centers of all sizes should generally adhere to the following criteria:

1. The site should be of sufficient land area to serve the particular type of center involved.
2. Access should be readily available by means of major thoroughfares.
3. Buildings should be grouped so as to operate as one functional unit. Free-standing commercial structures are not desirable.
4. On-site parking should be provided and entrances and exits should be constructed so as not to cause traffic congestion. Marked parking spaces should be provided within easy walking distances of the stores.
5. Truck traffic and loading facilities should be separated from customer traffic.
6. Foot traffic should be separated from vehicular traffic. Protection from the elements should be afforded customers while shopping, either by use of an enclosed, air-conditioned mall or a canopy system.
7. Landscaping should be provided and proper buffer zones established so that surrounding land uses are not jeopardized.

Expansion of Rolesville's central shopping area is limited by lack of vacant land, although a few more stores could be added.

Most new commercial growth in Rolesville will take place in outlying service centers. The Development Plan (Figure 11) shows a small shopping center with a mixture of retail and service uses at the intersection of SR 1945 and SR 2054. This location for a shopping center would be enhanced by a new bypass route around Rolesville.

Smaller retail/service areas are shown at intersections of major thoroughfares.

Residential

A technique for unifying neighborhoods which has long been urged by planners and architects, is the so called "neighborhood unit concept," which provides for the development of residential areas with an elementary school and neighborhood park at the center. Community churches and a clustered neighborhood commercial center are generally situated on the periphery, where they may service abutting neighborhoods. The neighborhood is bounded by traffic-carrying streets, but internal design intentionally discourages through traffic in the neighborhood by the use of cul-de-sac and curvilinear design which compliments the topography and reduces speeds. More specifically, residential areas should be established in accordance with the following criteria:

1. Topography should have enough contour to give the land character and provide good drainage. However, terrain should not be so rugged that excessive costs are incurred when utilized and roads are installed.
2. Residential areas should have easy accessibility to employment, shopping, and cultural activities.
3. Protection should be afforded to the area from traffic and other incompatible land uses.

4. Where a community has a limited amount of level land available, it should not be preempted for residential use to the detriment of other land uses that require level land.
5. Residential development should be compact, and municipal policies should encourage the prior use of land in (and immediately adjacent to) the town in the interest of public economy, rather than the development of distant "leap frog" subdivisions.
6. Interior street design should discourage through traffic.
7. Recreational facilities should be included as an integral part of neighborhoods, designed and constructed simultaneously, in conjunction with a neighborhood school where possible.
8. Multi-family housing areas should be located near major traffic arteries and recreational facilities, and not situated so that the traffic which it generates must traverse single-family neighborhoods.

Future residential development in Rolesville should be encouraged to "fill in" existing vacant tracts contiguous to developed areas, which will allow the town to provide services more economically.

Most new residential areas shown on the Development Plan are towards the northwest. This is an attempt to keep most new growth in the Sanford Creek drainage basin, thereby making sewer facilities more economical once they do become available. Note that outlines of new residential areas are irregular, with some "holes" in the middle. This should serve as an important reminder that some soils are not suited for development, with or without septic tank systems.

Cultural, Entertainment and Recreation

This category covers land which includes playgrounds, playfields, parks, and other open spaces which serve as areas in which people can conduct active and passive recreation activities. These areas also serve as buffer zones for noncompatible land uses and aid in breaking the monotony of a densely populated area. The following concepts should be adhered to in planning recreational areas:

1. The topography of the site should fit the facility to be developed.
2. The site should be large enough and properly located for efficient operation and maintenance. It should be quiet, clean, safe, and protected from heavy traffic.
3. Active recreation areas should be separated according to the age groups that will use them and easily accessible to the people who will be using them.
4. Recreational facilities should be combined with school facilities when possible to serve as educational and recreational centers for neighborhoods, or groups of neighborhoods.
5. Recreational areas should be developed along flood plains and areas where soils are inappropriate for more intense urban-type activities.

There are no parks or recreational facilities in Rolesville at the present time, and some park facility is needed. Two potential neighborhood park sites are shown on the Development Plan. One site, on the eastern edge of town is in the floodplain between two proposed residential developments. The second site, which would be more desirable in terms of accessibility, is north of Brown's subdivision. Both sites are wooded, and could be used for picnicking, hiking trails, etc., while continuing to use the school playground for athletic events.

IMPLEMENTATION

Preparation and adoption of a development plan for a community is relatively easy; all it takes is a little work and a little money. Implementation of the plan is not so easy; it is likely to take a good deal of money, and without a doubt it requires much hard work and perseverance on the part of everyone in the community. But it can be done. It does not have to be accomplished in a short period of time, and in fact it cannot be. Over a period of years, however, public officials and private investors using the plan as a guide can help to insure economical and orderly development.

Implementation of the plan can be achieved through five basic concepts: 1) land use controls, 2) financial aids, 3) local government policies and programs, 4) intergovernmental cooperation, and 5) citizen awareness and participation. Each of these will be discussed individually.

Land Use and Structural Controls

ZONING - Zoning is the most basic form of land use regulation. The zoning ordinance helps to insure that land users are properly located with respect to one another, that land is available for each type of use and that density of development is suitable for the level of community services and natural conditions. Zoning may serve as a protective device, preserving established uses from injury by new development, and simultaneously as a prospective mechanism, preserving undeveloped areas for their best use (e.g. large potential industrial tracts which should be preserved from subdivision into residential properties which would destroy the site's attractiveness for industry). Zoning is not a panacea, though, because many years of determined administration of the ordinance may be required before existing nonconforming uses and structures are brought into conformity and the zoning map begins to resemble the development plan in appearance.

Rolesville will be preparing a zoning ordinance, which should basically support the objectives of this plan.

SUBDIVISION REGULATIONS - The basic tool for guiding the design of new areas for urban use is subdivision regulations. Such regulations assure the development of a coordinated residential street layout and efficient platting of lots. Subdivision regulations require developers to maintain proper design standards and to provide necessary improvements in subdivisions. Developers may also be required to dedicate rights-of-way for proposed thoroughfares and sites for proposed community facilities. Developer and purchaser are provided with more effective means of title transfer and are protected against unsound subdivision practices. New homeowners are assured that sanitary systems will function properly, that promised paving, storm drainage, curbing, and other improvements will be properly installed, and that accurate markers will be provided for property line surveys. The chief benefit of such regulations is their ability to prevent many future problems while they are still lines on paper, representing a single tract of land, rather than permanent street rights-of-way and lots in numerous ownerships.

Rolesville should adopt subdivision regulations as part of its overall planning program.

BUILDING CODE - Building codes establish minimum standards for methods of construction and plumbing, heating and electrical installations. They also provide for inspection and enforcement of these standards. All nonfarm buildings are subject to the State Building Code. However, counties and towns must provide enforcement at the local level. Since much substandard housing is due at least in part to inferior original construction, a better quality of new construction could be fostered if Rolesville initiated a building inspection program.

Financial Aids

Federal grant-in-aid assistance to local communities is now in a state of flux with many funds frozen and other far reaching program changes imminent. One of the most pervasive changes proposed, and one generally conceded to have a good chance of congressional approval, is Community Development Revenue Sharing. CDRS, not to be confused with general revenue sharing, is a proposal to combine the following categorical grant programs into a single block grant:

- Urban Renewal Loans and Grants (including Code Enforcement)
- Open Space Grants
- Water and Sewer Grants
- Neighborhood Facilities Grants
- Rehabilitation Loans
- Model Cities

Those programs which Rolesville might have participated in to implement this plan include open space grants, water and sewer grants, and neighborhood facilities grants. Under the new (proposed) program, communities will have to compete for available discretionary funds on the basis of administrative and management techniques which enable them to complete the application. Prime responsibility will be local determination of goals and objectives and means to achieve them, which is going to require additional planning and management capabilities at the local level. This program will require increasing emphasis from communities in years hence, particularly if other programs continue to be reduced or discontinued.

Local Government Policies and Programs

Another effective tool for guiding growth and development is local government policies on extension of utilities, utility rates, bonding, and annexation.

Water and sewer extensions and improvement programs are an integral part of growth, but they most often are a response to growth after it has begun in an unguided manner. This leads to situations where water lines are extended past undeveloped parcels, perhaps for some influential developer, at a cost unjustifiable for the number of people it will serve. It also results in sewer extensions to several drainage basins, thereby requiring costly lift stations which the town must maintain thereafter. What is needed is a comprehensive written statement of town policies towards these utility extensions. These policies should refer to the goals and objectives of the Comprehensive Development Plan, particularly those for "compact and economical" development patterns. These policies should include guidelines on maximum amounts of undeveloped land which will be crossed to serve a new area, and formulas on cost-sharing of oversized facilities needed to serve future growth in an area.

Utility rates, too, are important local policies on growth. Rates must be fair to all customers, but there can be variations (between classes of users, not within classes) to encourage or discourage certain types of growth, particularly industrial growth. Bonding should be pursued when necessary to achieve the town's growth objective. Counselling from the Local Government Commission in Raleigh will ensure that a town does not exceed its statutory debt limitations, or its realistic ability to repay the debt.

Annexation can enable a community to keep pace with growth on its periphery, and to provide these areas with the urban services they need while giving the town a broader tax base, larger population (on which many state and federal shared revenues are based), and progressive image. Generally, areas which are urban in character and meet the statutory requirements of size, population density, etc., should be annexed. This general rule should be tempered, however, with the town's growth objective and development plan recommendations.

Intergovernmental Cooperation

North Carolina communities are fortunate in being able to cooperate in practically any joint venture they desire. Prior to 1971, communities wanting to undertake cooperative ventures had to do so under one of many specific enabling statutes. The 1971 General Assembly made it much easier to cooperate when it passed the Joint Exercise of Powers Act (G.S. 160A-460 through 160A-460). This act provides that:

Any unit of local government in this State and any one or more other units of local government in this State or any other state (to the extent permitted by the laws of the other state) may enter into contracts or agreements with each other in order to execute any undertaking. The contracts and agreements shall be of reasonable duration as determined by the participating units, and shall be ratified by resolution of the governing board of each unit spread upon its minutes. (G.S. 160A-461).

Any contract or agreement establishing such a joint undertaking shall specify:

1. The purpose of the contract or agreement;
2. The duration of the agreement;
3. If a joint agency is established, its composition, organization, and nature, together with the powers conferred on it;

4. The manner of appointing the personnel necessary to the execution of the undertaking;
5. The method of financing the undertaking, including the apportionment of costs and revenues;
6. The formula for ownership of real property involved in the undertaking, and procedures for the disposition of such property when the contract or agreement expires or is terminated;
7. Methods for amending the contract or agreement;
8. Methods for terminating the contract or agreement;
9. Any other necessary or proper matter (G.S. 160a-464).

Rolesville has the opportunity and statutory authority to cooperate in joint programs to achieve its goals and objectives.

Frequently programs can be initiated or facilities constructed cooperatively with another unit of government which could not otherwise be afforded. Rolesville is already participating in one intergovernmental program through its perimeter agreement with Wake County for extending water lines. Another possibility is a joint building inspection program with Wake Forest and/or Louisburg. Region "J" officials can help in promoting and implementing cooperative ventures.

Citizen Awareness and Participation

The residents of Rolesville can help significantly in implementing this plan through their support of the proposals made herein, and through their willingness to contribute their talents on committees or their ideas at public meetings and hearings. To involve town residents in community decision-making will require a commitment of the Planning Board and the Town Board to disseminate

information to the community on a regular basis through the news media and various public forums, so that the lay public will have the necessary background information to make rational decisions about how they want their community to develop. This input should be used to refine or revise plan recommendations, as needed. Publicizing the plan so that its implications for public policy are understood by townspeople would be a step in this direction. A thorough treatment of the plan and its objectives in the newspaper would aid in accomplishing this objective.

ENVIRONMENTAL ASSESSMENT STATEMENT

TOWN OF ROLESVILLE

Land Use Survey and Analysis and Land Development Plan

1) Summary: The Land Use Survey and Analysis presents background information on population and economic characteristics, natural environment, land use, and community facilities and services. Population projections are made, and development potential is evaluated on the basis of background information. The Land Development Plan discusses community development goals for Rolesville, future land requirements, and locational criteria. Based on land development potential and other planning criteria, desirable locations for future land uses are shown on a map. Methods of implementation are discussed, and the importance of citizen awareness and participation is emphasized.

2) Environmental Impact of Proposed Plans: Environmental impacts of the proposed plan are discussed in terms of: 1) impacts during the planning phase, 2) impacts during implementation, and 3) secondary impacts and consequences.

During the planning phase, impacts could be felt from accelerated development due to speculation over subsequent zoning or other regulatory controls. Any type of development can, of course, have positive and/or negative physical, social, and economic impacts, and development during the planning phase would be no exception. However, if development is accelerated for the purpose of avoiding future regulatory controls, there may be higher percentage of negative impacts (placing structures too close together, too close to roadways, etc.) than if the construction took place after regulatory controls took effect. Due to Rolesville's small size, however, it is doubtful that this would be much of a problem.

The plan implementation phase will of course take place over a long period of time. Impacts, both positive and negative, will be due for the most part to facilities and land uses recommended in the plan. Since the plan takes into consideration the natural environment (soils, waterways, winds, etc.) as a major factor for recommendations, there should be a lower percentage of negative environmental consequences if development takes place according to the plan than without it. For example, some families in Rolesville have experienced problems with septic tanks due to placement in unsuitable soils. The development plan shows areas of unsuitable soils, and discourages building upon them.

If construction of recommended facilities does take place, some negative environmental impacts will be unavoidable. In terms of public projects, the singlemost important recommendation is the U.S. Highway 401 bypass north of town. If this facility is ever constructed, a detailed impact statement would be prepared at that time. However, certain negative consequences can be anticipated at this time, including noise, impaired air quality, interaction with surface drainage (Class D and A-II streams), soil erosion, land use changes, etc. Positive impacts would include improved environment in more densely settled areas of town, less traffic congestion, greater mobility to jobs and shopping, better access to public services, and rejuvenation of local economy.

3) Adverse Environmental Effects Which Cannot be Avoided Should the Proposed Plans be Implemented: Some of the potential adverse environmental effects outlined in (2) above cannot be avoided entirely, particularly in regard to the highway bypass. Noise, impaired air quality, and soil erosion during and after construction could be minimized, but not eliminated.

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4) Alternatives to the Proposed Plans and Analysis of Those Alternatives: Analysis of alternative locations of land uses is not feasible since variations and combinations are limitless. Alternative locations for the proposed bypass route should be examined, and will be in subsequent impact statements if the plan is implemented.

An alternative of not planning for best locations of future land uses is a realistic one (many communities are doing it), but this would result in a continuation of haphazard growth which has shaped the town thus far, and led to problems such as incompatible land uses in close proximity to one another, and heavy truck traffic through the center of town.

5) Relationship Between Short Term Uses of Man's Environment and the Maintenance and Enhancement of Long Term Productivity: One factor taken into consideration in the development plan was preservation of prime agricultural land southeast of town for agricultural purposes. Short term uses of land as Rolesville grows towards the north and west should be environmentally compatible with long term preservation (agricultural use) of land to the southeast.

6) Irreversible and Irretrievable Commitments of Resources if Proposed Plans Implemented: Some irretrievable commitments of resources will result from construction of a highway paypass around Rolesville; however, it is a relatively small project and commitment of resources would not be inordinately large.

7) Other Interests and Considerations of Federal or State Policy Thought to Offset Adverse Environmental Effects of Proposed Plans: Additional impact statements may be required if specific recommendations are implemented with state or federal assistance.

8) Applicable Federal, State, or Local Environmental Controls:

- Wake County Health Department regulations governing installation and operation of septic tanks.
- National Environmental Policy Act.
- North Carolina Environmental Policy Act.
- North Carolina Sedimentation Control Act.

9) Mitigation Measures Proposed to Minimize Impact: These will be outlined in EIS for specific projects as implemented.

